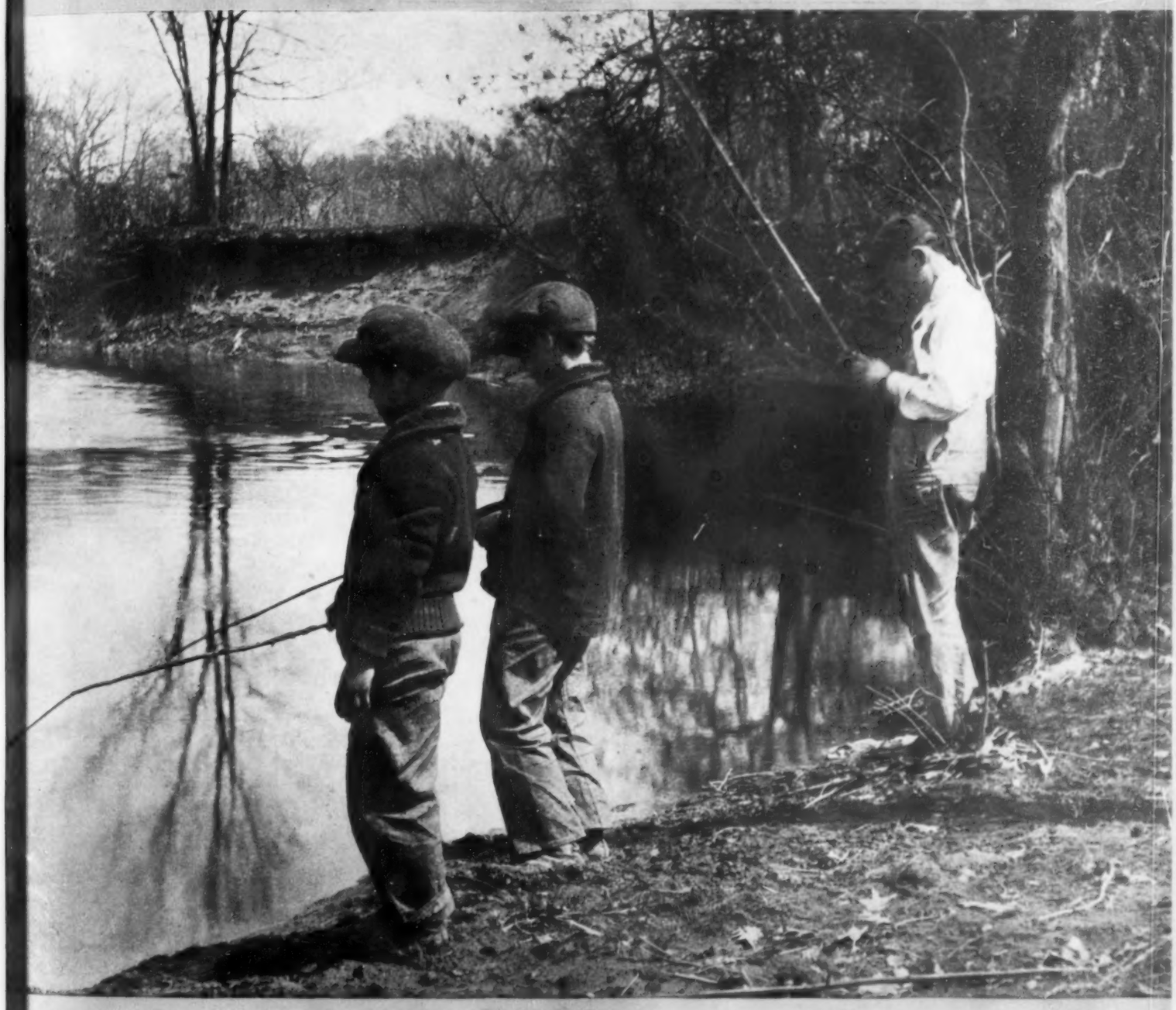
Medical Lib.
FEB 23 1924

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association



Mar. 1924 25 Cents

Prizes for Health Posters

Teaching Children To Like Wholesome Food

Will Movies Supplant the Teacher?

Disease Lurks in the Corners

IZAL Powder Puts It to Rout

This famous disinfectant and insect repellant is now supplied in convenient powder form. It is—

SAFE
EFFICIENT and
ECONOMICAL

USE
IZAL POWDER
FOR THESE
PURPOSES

Toilets
Garbage Cans
Floors
Cellars
Halls
Dispensaries
Hospitals
Street Cars
Chicken Coops
Dog Kennels
Barns
Garages
Factories
Stock Farms
Cattle Pens

IZAL is one of the best known disinfectants in Great Britain and the British Colonies—It is an official disinfectant of the British admiralty. This remarkably efficient disinfectant is now supplied in the United States not only as a milk white emulsion, but also in convenient powder form in 1-lb. shaker cans at 25 cents.

SPECIAL PRICES TO PHYSICIANS, HEALTH BOARDS AND HOSPITALS

Ask Your Druggist or Order Direct

THE ABBOTT LABORATORIES
CHICAGO

New York **Seattle** **San Francisco** **Los Angeles**

Canadian Agent for Izal: Hygiene Products, Ltd., Montreal, Toronto, Winnipeg, Calgary and Vancouver

HYGEIA, a Journal of Individual and Community Health, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $3.00; for Canadian postage add 30 cents, foreign 50 cents. Volume 2, Number 3. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103, Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association

VOLUME 2 — MARCH, 1924 — NUMBER 3

EDUCATORS AND WRITERS IN THE MARCH *HYGEIA*

LYDIA J. ROBERTS is connected with the home economics department, school of education, University of Chicago. DR. JESSE FEIRING WILLIAMS, a well known author of books and articles on physical education, is in the department of physical education, Teachers College, Columbia University.

FRANK W. FREEMAN is professor of educational psychology at the University of Chicago and has directed some special research in the relation of motion pictures to education. Formerly director of health education in the Detroit Public Schools, ETHEL PERRIN is now associate director of the American Child Health Association. DR. BERNARD FANTUS is well known as a teacher and writer on medical subjects. DR. ARTHUR J. CRAMP heads the Bureau of Investigation of *The Journal of the American Medical Association* and is a member of the editorial board of HYGEIA.

JOHN T. LEMOS of Leland Stanford University is assistant editor of *School Arts Magazine*. HELEN T. WOOLEY is connected with the Merrill-Palmer School in Detroit as assistant director.

DR. ARTHUR D. BLACK is dean of a university school of dentistry, Chicago. DR. KATE CAMPBELL MEAD, president of the Medical Women's National Association, is the author of "The Middle-Aged Woman" in the January HYGEIA.

DR. LUDVIG HEKTOEN is director of John McCormick Institute for Infectious Diseases, Chicago, and DR. ETHEL B. PERRY is connected with the same institution. DR. ALLEN W. FREEMAN is a professor in the Johns Hopkins University school of public health. BRIG. GEN. L. R. GIGNILLIAT is associated with Culver Military Academy.

The April Issue:

"All persons should exercise daily," says JESSE FEIRING WILLIAMS, *professor of physical education, Columbia University, in the second part of his article on "The Rules of the Game." Exercises will not remove freckles from your face, nor will they revive falling hair, but they will help you stand right, breathe right and feel right. You'll enjoy reading this article in the April issue.*

WILLIAM BYRON FORBUSH, *whose article on "The Old Medicine Chest" appeared in the January issue, has written an interesting article on "The Child's Need of Solitude."*

DR. HERMAN GOODMAN *will tell you how to take care of your hair.*

"Now This Matter of Reducing Weight" —DR. L. M. DAVIDOFF *gives some common sense rules for those who would be slimmer.*

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

CONTENTS

EDUCATIONAL NUMBER

COVER—PLAYING HOOKEY
Harry C. Phibbs — PAGE

FRONTISPIECE—WITH A VISITING NURSE IN ROME (175)
George Henry High

TEACHING CHILDREN TO LIKE WHOLESOME FOODS . . 135
Lydia J. Roberts

THE RULES OF THE GAME 142
Jesse Feiring Williams

WILL MOVIES SUPPLANT THE TEACHER? 146
Frank N. Freeman

HAPPY HEALTH EDUCATION IN DETROIT 151
Ethel Perrin

WHAT WE EAT AND WHY 154
Bernard Fantus

CURING "RHEUMATIZ" BY MAIL 158
Arthur J. Cramp

PRIZE CONTEST FOR POSTERS ON HEALTH SUBJECTS . 161

HOW TO PLAN A POSTER 162
John T. Lemos

OVERCOMING CONTRARINESS AND FEARS IN CHILDREN 164
Helen T. Wooley

PYORRHEA 170
Arthur D. Black

NOTHING BUT A COLD 173
John B. Huber

A VISITING NURSE IN ROME 175
Kate Campbell Mead

NEIGHBORLY DISEASES—SCARLET FEVER 179
Ludvig Hektoen and Ethel B. Perry

NEW WEAPONS AGAINST AN OLD ENEMY 181
Allen W. Freeman

MAKING THE CADET PHYSICALLY FIT 184
L. R. Gignilliat

PLAIN FACTS ABOUT HEALTH AND DISEASE:
Health News of the Month 187
Against What Should We Be Vaccinated? 188
Mah Jongg Dermatitis 189
Play or Plow? 189
Heredity and Body Structure 190
The Milbank Memorial Fund 190
Irritation from Furs 191

CLARA CLEANS HER TEETH 192
Margaret E. Greenwood and Eleanor M. Fonda

THE LITTLE RED LANE 193
Louise Martin

HEALTH NEWS AND VIEWS 194

BOOK REVIEWS 199

QUESTIONS AND ANSWERS 200

HEALTH REVIEWS 202

Copyright, 1924, by the American Medical Association. All rights reserved.

Yearly subscription price, $3.00; for Canadian postage add 30 cents; foreign, 50 cents.

George H. High

"Where all day long old Roman women do their laundry, pounding clothes on the wet stones" (page 175).

"How can I get him to eat it?"

Here are seven rules for parents who are determined their children shall not be finicky about their food.

1. Begin training early.
2. Set a good example.
3. Never talk of your own dislikes.
4. Develop the right attitude in the child's mind.
5. Serve really good, well cooked food.
6. Keep the diet simple, with few sweets.
7. If necessary, use authority.

Teaching Children to Like Wholesome Foods

LYDIA J. ROBERTS

IT is a comparatively easy matter to explain to a group of mothers how a child should be fed in order to insure normal growth and development. The dietary can be outlined entirely in terms of foods to be included—the amount of milk, vegetables, fruits, cereals, and other foods—and the directions for carrying it out can be so simple that a ten year old child should be able to follow them.

Moreover, it is not a difficult matter to convince mothers that these foods are needed, nor to arouse in them an interest and a desire to have their children living on such an adequate diet. Any one experienced in such matters knows that this can all be accomplished in an hour's time. But he also knows that having done so—even to the extent of making the mother genuinely anxious to feed her child correctly—he is not by any means assured that the child will be so fed. He comes suddenly up against the stone wall of the children's likes and dislikes and the mother's inability to alter them.

"But my child doesn't like milk"; "he hates oatmeal"; "I can't make him eat spinach"; "egg makes him sick"; "how do you get a child to eat vegetables?"

These with many variations are the protests and questions with which any speaker who has presented this subject knows he will be greeted the moment he concludes. He finds, in fact, that he has covered the easiest part.

Many of the mothers already know what the child should be fed; but their all-absorbing question is, How can I get him to eat it? And that, one realizes, is another story and a long and important one, involving the whole problem of child psychology and habit formation.

Because of the universality of the plea for an answer to this problem, this article purposes to begin where most articles on children's feeding leave off, and will attempt to answer at least in part the question, "How can a child be taught to eat and to like the foods he ought?"

How Likes and Dislikes Originate

Before coming specifically to this practical problem of how to train children in correct habits of eating, a brief consideration of how people in general form their food habits may prove highly suggestive of modes of attack.

Why, we may ask ourselves at the outset, do we all like some foods and dislike others, and why do my likes and dislikes differ from yours?

Presumably we both have the same taste organs and, if we eat the same food, the same sensation is doubtless carried to the brain of each of us. And yet to you that sensation of taste may be pleasant, to me positively disagreeable. How can it be?

It is evident that the difference lies not in the food, nor in the organs of taste, but in the mind's reaction or attitude toward the taste

recorded. The whole question of how such varying mental attitudes toward the same food may develop in different individuals can be fully explained only by the psychologist. Nevertheless, certain methods by which our tastes are developed may easily be discovered by any observing person.

It is evident first of all that *we like, in general, foods to which we have been accustomed from our earliest years.*

Why do the Chinese like rice, the Italians macaroni, the Irish potatoes, and the Scotch oatmeal?

Because of an inborn preference in each for that particular form of starch? Not in the least. An Italian child brought up from birth in a Chinese home would share the typical Chinese liking for rice rather than for the Italian macaroni, and a Scotch child in an Irish home would doubtless be as fond of potatoes as any Irish lad. Each of these nationalities, in short, likes his own diet largely because it is the one to which his palate has been educated through a long period of years.

Southerners like hot breads and foods cooked in fats; Mexicans, chile con carne and all very highly seasoned foods; New Englanders, beans and brown bread; and other sectional groups have their own special preferences for the same reason—because they are used to them.

"The Kind That Mother Used to Make"

This prejudice in favor of foods with which we are familiar may be observed not only in the likings of nationalities and sectional groups but in individuals as well. How else explain a grown man's preference for his mother's pies, or bread, or cabbage, when, to an unprejudiced observer, the pies are tough, the bread sour and heavy, and the cabbage dark in color and vile in flavor from bad cooking.

An elderly woman who for 40 or 50 years had been drinking tea "steeped" for five or ten minutes listened politely while her daughter explained that steeping brings out the tannin, the objectionable acrid property of tea, drank the cup the daughter prepared for her by the proper method, and then summed up her verdict in the word "tasteless," adding with a twinkle in her eye, "Apparently it's the tannin that I like." And undoubtedly it was; for a lifelong daily training will usually result in the liking of almost any flavor, however desirable or undesirable the food may be in itself. What a hint for parents!

Food Habits Acquired by Imitation

We not only like foods to which by long experience we have grown accustomed, but *we readily acquire likes or dislikes by imitation, conscious or unconscious, of those about us, especially of those we admire.* So common is it, indeed, for a child to duplicate exactly the tastes of an adored parent—the father perhaps in particular—that parents commonly assume such tastes to be hereditary.

"But aren't there children who can't eat certain foods because they have inherited an idiosyncrasy against them?" inquired mother. "Now I *just can't* drink milk. The thought of it nauseates me. And John has always been just like me."

Of course the correct answer to this question was that such idiosyncrasies for foods do exist. A few questions, however, clearly revealed the fact that in this instance—as in the large majority of such cases—John's dislike for milk was not an idiosyncrasy, neither was it inherited; it was merely a dislike acquired by unconscious imitation of a parent, who not only set the wrong example but talked about it continually. Had the mother but known, she might by the same method have developed a liking in her child for that same food.

"Father and I don't like tomatoes, but we do like carrots, and mother and John like tomatoes and don't like carrots. Isn't it queer?" Such is the familiar formula by which children, and often their mothers, call attention to this interesting resemblance. There is, as a matter of fact, nothing queer about it. It is merely an illustration of the well known axiom that we imitate what we admire, in food habits as well as in other matters.

Who, even of us adults, has not acquired a liking for something to which we were naturally averse—olives, artichokes, lemon in tea—in imitation of people whom we admired, or because correct social usage seemed to demand it? Make it really popular—the style, if you please—to like any food, and its liking by the large majority is already assured.

Food Luxuries Are Enticing

A food easily becomes popular and a liking for it consequently more easily acquired by most of us, if it happens to be regarded as a luxury.

It is human nature not to want to miss any good thing which others seem to enjoy. All teachers know that whether the back or the front seat in school is the most coveted one depends entirely on the attitude created toward them usually by the teacher herself. If only studious, trustworthy children are allowed to sit in the front seats in view of the whole school, while the disorderly children are put in the back seats where no one needs see them, the clamor will always be for front seats. If, however, the teacher's use of the seats is reversed, their popularity will shift accordingly.

Grignon

At this school lunchroom a premium is placed on the clean plate. Among this group it became popular to like spinach and the students actually asked for the once despised vegetable.

In one schoolroom the children all objected to sitting by one particularly troublesome boy because of his constant annoyance. But the attitude changed entirely when one day the teacher called for four volunteers who were "strong enough" to sit on the four sides of this boy, pay no attention to him, and allow nothing he did to interest or annoy them. Needless to say, every child in the room wanted one of those four seats because it had now become a privilege to have them.

The same rule holds in the realm of foods. A little girl who claimed she had learned to like spinach was asked to tell how she did it.

"Oh," she explained, "father and mother and sister all ate it and seemed to like it so much I thought I must be missing something; so I began to eat it, too, and after a while I liked it."

A small boy of my acquaintance learned to like olives, though at first they were so distasteful that he practically swallowed them like pills, because his sister regarded them as luxuries and was glorying in the fact that she could have more because he didn't like them.

My own fondness for chicken livers, I well remember, was acquired in similarly ignoble fashion. To see what was so evidently a luxury consumed unchallenged by one gloating member of the family—an older sister—seemed entirely out of keeping with the fitness of things, and I straightway cultivated a liking for the heretofore uninteresting food.

Children beg for coffee largely because it is regarded as a privilege confined to and evidently enjoyed by their elders. I venture to say that if the father each morning took his coffee with a grimace, as if it were a bitter dose of medicine, there would be little begging on the part of the child for tastes. And even if he did taste it the bitter flavor would be sufficiently convincing to make one dose enough.

Not only do we acquire tastes by conscious or unconscious imitation of those whom we admire, or because some foods being regarded as delicacies or luxuries seem especially desirable, but *to a certain extent we deliberately train ourselves to eat,* and as a rule therefore eventually to like *foods which we are convinced can benefit us in some much desired way.*

True, we may in general resent the idea of eating foods merely because we know in an indefinite way that they are good for us. Nevertheless, once convince the average person that the presence of a particular food will actually have a certain desired effect, and he will not only be willing but anxious to eat it.

Eating Crusts to Make Hair Curly

Some of us can remember having eaten onions day after day for the sake of the promised good complexion, or of having faithfully consumed bread crusts and burned toast in the earnest, even if mistaken, belief that thereby we might acquire curls.

Boys in athletic training live strictly on their prescribed diet, not because of some indefinite future good they hope it will do but because they honestly expect it will help them win the game tomorrow or next week.

A prospective mother may declare that she doesn't like milk, that she can't drink it; but prove to her that her chances of coming through pregnancy without detriment to or loss of her teeth depends to a considerable degree on having sufficient calcium in her diet to build the skeleton of the child without drawing from her own store, and she will "down" her quart of milk daily, whether she enjoys the flavor or not.

"You'll never be much of an athlete," said a physical director to a freshman on completion of the boy's first physical examination. "You're too light."

"How much do I need?" promptly responded the boy.

"Put on ten or fifteen pounds and you may stand some chance," was the director's answer, to which, quick as a flash, came back the boy's eager "How'll I get it?"

To Play on the Team

The directions he received were followed to the letter, and the fifteen pounds gained in a surprisingly short time because the motive was a vital and urgent one.

Furnish an honest and compelling motive to any child who has reached the age of reason, and he will do the rest.

Other methods by which food habits and prejudices are acquired might be suggested, but it is unnecessary to proceed further with the list since the ones already given furnish enough "tips," if deliberately employed, to solve the entire problem of teaching a liking for wholesome foods.

Let us then consider methods of applying these principles specifically in the developing of right food habits in children.

This problem presents two somewhat different aspects. The first, and by far the simpler of the two, is the problem of how to develop right food tastes in a child, assuming you can have him from the very beginning before any habits are formed; the second is the more difficult task of training the older child who has already formed bad habits and has developed strong food prejudices, many of which must be uprooted.

Training the Child from Birth

A child is born without habits. It is almost safe to say, therefore, that if one can take a child from birth he may educate that child's taste almost as he wills, provided he has his ideal in mind from the outset, understands the method of procedure, and carries it out faithfully and consistently.

These are large provisos, it is true, yet not by any means more than should be expected of parents or others undertaking the feeding of children.

Suppose, for example, both parents of a child resolve that that child shall not grow into the candy-and-trash-eating, finicky child so almost universal today, but shall be taught to like all wholesome foods and to eat what is set before him with gratitude and relish. How shall they proceed?

Obviously the first step is to know what foods are necessary and wholesome for children and at what ages and in what ways they should be introduced.

With the hosts of excellent books, bulletins, and magazine articles now available on this subject of children's feeding, such information may be easily obtained by any parents desiring it. If in addition to this knowledge they have a firm conviction of its importance, they may by strict adherence to a few simple rules, most of which have already been suggested, practically realize their ideal.

Put into the form of definite rules for parents, the program of training may be given as follows:

Begin with the Infant

1. Remember our strongest and most ineradicable likes are those of longest duration.

Begin early, therefore, *to cultivate a taste for foods which are most important for a child to like.* The newer method of infant feeding makes full use of this principle. Cereals are introduced by or before six months, vegetable juices shortly after, and other foods in logical order. Small amounts are given at first to accustom the child to the new flavor, the amounts being increased and the kinds varied as the taste is developed.

The child thus gains a definite "food vocabulary" so naturally and gradually that by the time he is two years old he knows and likes all the common cereals, a variety of vegetables and fruits, egg, milk, potato, bacon, and all the foods which it is desirable he should have.

All of this is gained merely by patiently and persistently accustoming him to the flavors by oft repeated tastes and constantly increasing

This teacher keeps a daily health record and competition among the pupils is high.

amounts. And this rule holds for the introduction of new foods which shall later need to be added.

If a child has been thus taught until the age of two, the food battle is more than half won, though it often requires considerable perseverance and ingenuity to maintain these likes and develop others during the preschool period. To do this requires the strict observance of the remainder of these rules.

2. *Let the parents set the right example* if they would develop proper habits and likes in their children. The only safe way is for the parents really to like and to eat all the foods they desire their children to eat, and this they can train themselves to do by the selfsame methods which they plan to use with their children. Whether or not they accomplish this, they should at all costs never talk before the children of their own dislikes.

3. *Make it an infallible rule never to talk of dislikes in the presence of children.* The safest method is to talk as little as possible about foods, but to assume that everyone likes and eats all foods served.

"We don't talk about oatmeal at our house, we just eat it," said a four-year old from a home where this rule was observed.

Grignon

Solving their own food problems in the classroom

If any talking must be done let it be of likes rather than dislikes. Nothing could be more fatal to the development of correct habits than the almost universal custom mothers have of rehearsing their children's dislikes for the edification of their friends in the presence of the children. If they would make it a rule to boast only of a child's likes and to keep his dislikes in the background as something of which to be ashamed—as it is—the child would adjust his attitude accordingly with decided profit.

Make it really popular, in other words, to like instead of disliking foods, and see how quickly the child will respond.

Develop the Right Mental Attitude

4. *See that the child's mental attitude is right when giving a new food,* if this is possible. Instead of proffering it as a dose of medicine, give it as a food which grown-ups eat and like and which he is now big enough to have.

This does not for a moment mean that one should tell a child something is good which is not, as parents unfortunately often do with bitter medicines; it merely means that if a food which is really good is offered with the expectation that it will be liked, the chances are far greater that it will be, particularly if it is regarded as a luxury and given in very small amounts at first; for taste, we have already indicated, is largely a matter of mental attitude.

Like it yourself; eat it with relish; treat it as a luxury meant for grown-ups; let the child himself first request it, if possible; give it grudgingly in small amounts, and see if the new food is not easily introduced.

5. *Be sure the foods given a child really are good,* if you expect them to be liked. Although, as has been shown, a child may by persistence be taught to like almost any flavor, it distinctly simplifies the matter if foods are palatable.

Many of children's dislikes for milk are due to giving them milk which has turned or has absorbed flavors from the ice box or from weeds the cows have eaten; and some of the prejudices against cabbage and other vegetables are justly due to the unpleasant cooking odors or to the overcooked, black product with its bad flavor.

The infant welfare doctor and nurses who spent an afternoon working out a vegetable soup recipe for infants which should be dietetically satisfactory and palatable to themselves were acting in harmony with this principle. It is not surprising, therefore, that success has usually attended the introduction of that soup. How to cook foods to insure palatability and attractive appearance will be discussed in a later article and is merely mentioned here because of its importance.

Cut Down on the Sweets

6. *Keep the diet simple, limiting all highly flavored foods particularly sweets,* if you would have a child like the foods he ought.

A dislike for spinach, cabbage, or other foods with decided flavors may merely mean a lack of training in their use; but when a distaste for milk and other mild bland foods develops it is usually a safe guess that the child is getting far

too much sweet or other foods with distinctive flavor, such as meat or coffee, or merely too much variety.

After experience with the finicky, city child it was a distinct surprise to the writer to find a rural section in which a nutrition survey revealed scarcely a child who disliked milk or any vegetables he had ever tasted. The explanation, however, was simple. With little sweet and no delicacies to satiate the appetite, the mild, bland diet was eaten with relish in response to the normal hunger developed by outdoor life.

The hint to parents is this: If a child who is not sick does not like plain wholesome foods, try removing all sweets and other highly flavored foods from the diet, send him out doors to get good and hungry, and give him three plain meals of milk, cereal, bread, vegetables, potatoes, eggs, with *nothing* between meals but water, and see if he does not shortly respond with a healthy appetite for the plain foods.

Use Authority if Necessary

7. If all the above fail—which is very unlikely if they are consistently employed—*put before the child the foods he should have and see that he eats them.*

No mother I know allows a child to go dirty merely because he happens not to enjoy the process of neck and ear washing. The maternal pride is at stake, so he is caught and scrubbed, regardless of protests. Even the most indulgent mother will likewise harden her heart and force medicine down a child if she earnestly believes it is for his good. Why should she be so firm in other matters and so weak in matters of diet?

If a child wants nothing to eat he is probably sick, but if he eats only foods which he likes and refuses those which he really needs, then firm treatment is needed.

"Helen," said an eight year old boy to his sister of four, during their mother's momentary absence in the kitchen, "you may as well eat that vegetable one time as another. When mother says you have to do a thing she means it." And Helen took his advice.

It is better, of course, if a real liking for the foods can be developed by the methods above described, but if this cannot be accomplished the parents should realize that the child's normal growth and development depend on his having daily all the substances which his body needs, and that it is their duty as his parents to see that he gets the foods which provide them, whether he likes them or not.

A Wise Father

As a summary of much of the foregoing discussion, a story told by a well known children's physician of his own youth is used with his permission in this connection.

The family was large—so runs his tale—the income small, and the meals simple and frugal, soup one day and stew the next being the usual extent of their variety.

One day as the father and boys entered the house a strange odor greeted their nostrils. "M—m!" exclaimed the father, sniffing with pleasure, "mother has cooked us a new dish. Isn't that fine?"

Now a new dish was a great rarity, so the father's enthusiasm spread to the boys and all sat down to the table in eager anticipation. When the dish appeared it seemed to have a strange resemblance to the soup of other days; but the flavor was somewhat different and the father's enjoyment of it so evident that the boys following his example ate it greedily, even sending back their dishes for the second and third helpings. Then they joined their father in praise of the new dish and their mother's kindness in preparing it.

"And," concludes the doctor, always to one's surprise when he tells the tale—"if you ask me now, I'll take it burned! I like it best!"

If all fathers were as wise as this one, all meals as simple, all appetities as keen from outdoor work and play, any child could be taught to eat burned soup, if need be, and there would be no problem of the finicky child.

How to Reform Finicky Children

But not all parents are as wise as he, and neither have all children been correctly trained in eating from the beginning. Indeed, the great majority of children have been allowed to form food prejudices and are on the whole a fussy, finicky lot who don't like vegetables, who can't drink milk, and who must have candy.

When children have reached school age with such habits formed, there is little likelihood that the parents unaided are going to be very successful in uprooting old habits and establishing new ones, for it means suddenly veering round and changing their whole method of conduct, forbidding things which have heretofore been allowed and insisting on things which have formerly been neglected. This is a possible but very difficult thing for parents to do, and it rarely, in fact, occurs.

In such situations, therefore, *some one outside the home—the teacher, the nutritionist, the physical training teacher, the physician, the dentist, or the nurse—can do far more than the parents toward establishing better food habits, though the cooperation of the home is of course needed.* And even parents who have always insisted on the correct diet appreciate the help of the outside influence during this period.

It is nothing short of miraculous to the mother when her child suddenly comes home some day and demands a food he has formerly refused because he has learned to like it. And the comparative ease with which children's

attitudes and likes may be changed by a skilful teacher seems no less marvelous to the ones who are responsible for these changes.

A combination of a health lesson, a supervised lunch, and a daily health record has proved repeatedly a highly effective means of handling this problem, though any one of the three used to its fullest capacity by the right person may often work the same result. The possibilities of such a combination may be best shown by describing the change effected in one short lesson followed by a lunch and records.

Football Captain Eats Spinach

In this lesson on vegetables a preliminary informal discussion revealed the fact that every child liked a few vegetables but disliked more, and that all detested spinach.

Nevertheless, after the lesson in which they had seen some red iron (oxide); had put it into water and noted its resemblance to blood; had learned that it is iron in blood which gives it its red color; had prepared two test tubes, one with much iron to represent rich red blood, the other with little iron to typify pale blood; had picked out people they knew who they would judge must have the former (Jimmie Pyott, the Chicago football captain, being their prize example); had learned that iron can get into one's blood only from the foods one eats; had found that vegetables are one of the best sources of iron, the green ones being the richest; had put these best ones in a select group by themselves and resolved to eat them wherever they got the chance—having done all this with interest at white heat, they were ready when asked as a climax to the lesson what vegetables they would like to have for their next lunch to chorus, "Spinach!" to their own surprise, as well as to that of their teacher.

Only thirty minutes! And yet during that time their attitude had changed from one of disgust to that of actually requesting the once despised food. Not only so, but they went to the lunch room willing to taste, to eat, and a goodly number to like spinach, and they ran home anxious to tell their mothers of their new liking.

Why had they changed?

For several reasons: *First,* because they had learned a real reason for eating spinach which appealed to their interest and judgment as sound. *Second,* because it had become popular with their group to like it. The premium was put on the ones who liked or could eat it, and they enjoyed having their names listed with this honored group. *Third,* many of them had never tasted it but were sure they didn't like it.

With a changed attitude, a small serving palatably cooked and attractively served, liking spinach was not after all a difficult matter.

Not every child really enjoyed it, but all were willing to eat it and to agree to take a taste as often as possible. And since daily records were thereafter kept of vegetables eaten, the taste for spinach and other vegetables was shortly developed in all.

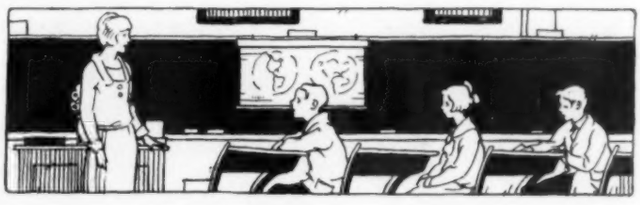
Put Children in Health Class

Similar lessons on other foods, followed by an opportunity to eat together the one in which the attention has been focused, have worked out in the same satisfactory manner. And when parents cooperate by being interested in the project, by making the foods available, and by attention to the daily records, really astounding improvements in children's eating have been made.

Mothers often testify that the class has done for their children what they have failed to do in years of effort, and that the children's habits have been completely made over in a few weeks' time.

The suggestion for parents having children of school age whose dietary habits need reforming then is to put them into a health class, if it is possible, in order to secure the help that comes from an outside influence while changes are being initiated, or to ask the teacher to help on the problem by health lessons and the keeping of health records in order to send the children home with the right attitude.

Then if the parents will apply the rules outlined in the first of this paper, as ones which should have been followed from the beginning, it will still be possible to realize the ideal of a child who likes and eats all simple wholesome foods with genuine enjoyment.



The Rules of the Game

Part I

JESSE FEIRING WILLIAMS

The whole of life's a game
And all the men and women merely players.

FOR my purposes, Shakespeare should have written his famous couplet in this form. Surely he would have done so but for the fact that he was concerned with preparing a stage where he could parade the seven ages of man. Shakespeare's training was of the stage; mine, of the game. And thus I justify the change.

The game's the thing, however. To play it well; to win, to lose, take all, or draw—to play it well's the test.

But how to play it well! To meet each day's problems with energy and with power, to smile at disaster, not to flinch, to hit the line hard—are these secrets wrapt in the archives of the unknown, or may they be made available for all who can use them?

Civilization has placed great handicaps on man. He has been shackled by his own creations. Essentially a physical being, he has been striving since paleolithic times, to build more comfortable shelters, to develop new foods, and to pass on his physical work to other types of power.

Strong Muscles Are Bulwark of the Race

The rules of the game have apparently been changed. The Rules Committee has eliminated the line bucking, and has instituted the forward pass and the off-side kick, and the enthusiasts of the modern game are saying that the physical man is doomed, that he has shifted into the "lean and slippered pantaloon." The world is to be run by "brains" and "best minds," and the "ludicrous cult of muscle" is no more.

But such apocalyptic vision, while making the flesh creep, need not greatly disturb one. Strong muscles will ever be the bulwark of the human race. The ancestors of man settled that when they evolved in the way they did. *The nervous system, with its wonderful possibilities of development, has its foundation in the physical strata of life.* Man will always require for health's sake and also for sanity, poise, and happiness, a strong and essentially vigorous musculature. The story of evolution justifies our expectation here.

The simple, one-cell forms of life carried on all the functions of life. The game, comparatively simple for them, was easily played in the primordial mud. The first specialization of cellular tissues in these simple animal forms was in the development of muscles, and just as specialization in trades and industries in human social organization has resulted in the development of other specialists to provide food, shelter and sanitation for those engaged in teaching, fighting, and the arts, so too in the evolution of animal life we find evolving special systems for serving the needs of the muscles. Vital organs, such as heart, lungs, digestive tract with its appendages, kidneys and brain and spinal cord appear.

Difficult to Secure Proper Exercise

This historical evidence is substantiated today by the facts of modern life. The brain and cord, the vital organs themselves, are dependent for energy and power on proper development and use of the muscles of the body, and in particular the muscles of the trunk.

In the years even before the Neanderthal man, the activities of life's game involved running, leaping, jumping, climbing, hanging, throwing, lifting and carrying.

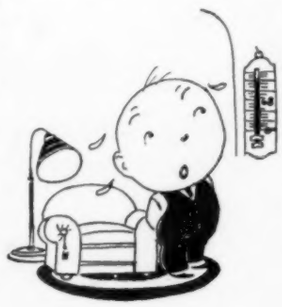
Certainly, these racial activities are immemorial. They constitute the very essence of man's physical inheritance; but our civilization, which has been so ostentatiously, and in so many ways unprofitably, developed lays a tax on his activity at the source, so that for a man it is exceedingly difficult to secure proper exercise.

To live well, to keep fit, to remain at the optimum point for mental work, requires an adjustment that calls for all that one has of intelligence and courage. Modern man has inherited a physical body with certain definite physical needs. He is living in an environment that makes difficult the satisfaction of these needs.

Can man change his nature?

What is necessary to enable him to meet the demands of his environment and his inheritance at the same time?

Is exercise alone sufficient?



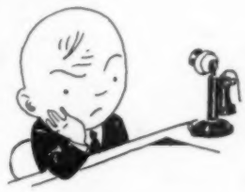
Society cannot be put back to flails for the men, and spinning wheels for the women. The cities will not be leveled, nor will the factory system disappear.

The outdoor movement, the interest in wholesome food and correct clothing, the fresh air program, and the revolt against foolish systems of gymnastics all are signs that intelligent man is seeking to adjust. False leaders have invoked science at times

to support their claims. Fake professors have prescribed harmless programs at hurtful prices for everything from obesity to neurasthenia.

Six Rules of the Game

But exercise alone will not suffice. The health of man requires the employment of at least six significant factors, if one is to play the game well.



These are: *Outdoor air, wholesome food in proper amounts, intelligent care of the body, rest and sleep, thinking straight, exercise.*

These essentials represent elements that may be possessed by everybody. They belong to no one alone. How to achieve sleep if one is a neurasthenic, how to take a bath if tub or shower is not available, will not be indicated here. It is planned to mark out the Road to Health, to lay down the Rules of the Game. Let those play who can and will.

Finally, it should be noted that the Road is not an easy road. It is in no sense a royal road. The player must pay the price, and this may mean at times sacrificing sweetmeats, the easy chair, the warm room, the sulking mood. No equivocation here—whatever the player chooses, he pays always!

Let it be remembered that health cannot be conferred by decree nor purchased by money. It must be won. To achieve health, the adult will need two things: *scientific information, and application of the facts to his own life.*

The six rules follow. Incorporation of them into one's actual life will bring regular health dividends. Clipping such coupons will help to make old age secure.

Rule I. Outdoor Air

The most scientifically controlled indoor air cannot substitute adequately for outdoor air. Indoor air will always lack sunshine, and sunshine promotes growth and development of the organs, enriches the blood with hemoglobin, and accelerates the nutritive processes throughout. To live indoors is to sell something of life. This loss may be kept down somewhat by maintaining proper indoor conditions. These are:

(a) Temperature of the air in winter at 68 F.

(b) Outdoor humidity secured so far as possible by open windows.

(c) Air movement secured by cross ventilation without producing marked draft. All sleeping quarters should have open windows, both in winter and in summer.

Rule II. Wholesome Food in Proper Amounts

The game of life is conditioned by the energy available. The man or woman without energy is the man or woman handicapped, trussed up, thwarted. What matter ideals, aims, purposes; effective action is lacking if energy is not available! The chief source of energy is food. Too much food, too little food, improper diet—any

*IS YOUR WEIGHT RIGHT?**

TABLE OF AVERAGE HEIGHTS AND WEIGHTS—MEN

Age	5 ft. 0 in.	5 ft. 1 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 4 in.	5 ft. 5 in.	5 ft. 6 in.	5 ft. 7 in.	5 ft. 8 in.	5 ft. 9 in.	5 ft. 10 in.	5 ft. 11 in.	6 ft. 0 in.	6 ft. 1 in.	6 ft. 2 in.	6 ft. 3 in.	6 ft. 4 in.	6 ft. 5 in.
15	107	109	112	115	118	122	126	130	134	138	142	147	152	157	162	167	172	177
20	117	119	122	125	128	132	136	140	144	148	152	156	161	166	171	176	181	186
25	122	124	126	129	133	137	141	145	149	153	157	162	167	173	179	184	189	194
30	126	128	130	133	136	140	144	148	152	156	161	166	172	178	184	190	196	201
35	128	130	132	135	138	142	146	150	155	160	165	170	176	182	189	195	201	207
40	131	133	135	138	141	145	149	153	158	163	168	174	180	186	193	200	206	212
45	133	135	137	140	143	147	151	155	160	165	170	176	182	188	195	202	209	215
50	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
55	135	137	139	142	145	149	153	158	163	168	173	178	184	191	198	205	212	219

TABLE OF AVERAGE HEIGHTS AND WEIGHTS—WOMEN

Age	4 ft. 8 in.	4 ft. 9 in.	4 ft. 10 in.	4 ft. 11 in.	5 ft. 0 in.	5 ft. 1 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 4 in.	5 ft. 5 in.	5 ft. 6 in.	5 ft. 7 in.	5 ft. 8 in.	5 ft. 9 in.	5 ft. 10 in.	5 ft. 11 in.	6 ft. 0 in.
15	101	103	105	106	107	109	112	115	118	122	126	130	134	138	142	147	152
20	106	108	110	112	114	116	119	122	125	128	132	136	140	143	147	151	156
25	109	111	113	115	117	119	121	124	128	131	135	139	143	147	151	154	158
30	112	114	116	118	120	122	124	127	131	134	138	142	146	150	154	157	161
35	115	117	119	121	123	125	127	130	134	138	142	146	150	154	157	160	163
40	119	121	123	125	127	129	132	135	138	142	146	150	154	158	161	164	167
45	122	124	126	128	130	132	135	138	141	145	149	153	157	161	164	168	171
50	125	127	129	131	133	135	138	141	144	148	152	156	161	165	169	173	176
55	125	127	129	131	133	135	138	141	144	148	153	158	163	167	171	174	177

* Height and weight taken with shoes on and coat and vest or waist off

one condition may prevent the development of maximum energy.

Determination of the amount and kind of food to be eaten is to be made by consideration of three factors: weight, age and height.

A player in the game of life is off-side if his weight markedly differs from the weight tables generally available. Underweight in early adult life is to be avoided; overweight after 30 years is a menace to health. The weight for height and age is given by the Life Extension Institute in the table.

If one weighs approximately what one should weigh, the probability is that one is not overeating or undereating. Of course there are exceptions. Disease of the endocrine glands, tuberculosis, obesity and other disturbances may be the cause of improper weight.

In general, however, the following schedule of food is satisfactory for those of normal weight:

(a) Soups.

(b) Vegetables, such as lettuce, beans, peas, corn, beets, carrots, potatoes, spinach, turnips and tomatoes. (Some persons with an idiosyncrasy for spinach and tomatoes will not include these foods in their dietary.)

(c) Cereals, such as oatmeal, corn meal and other coarse cooked cereals. If uncooked cereals are used, large quantities must be eaten to secure energy equivalent to that supplied by the coarse cooked forms.

(d) Breadstuffs, such as whole wheat bread, brown bread, hard rolls and the coarse breads usually made only in war time. Avoid refined foods. Use flour which contains the valuable salts and vitamins.

(e) Dairy products such as butter, milk, cream and cheese.

(f) Fruits, such as apples, oranges, bananas, peaches, figs, dates and grapes. The dried fruits, prunes, peaches, pears, figs and apricots are very valuable.

(g) Meat and eggs. Meat is to be eaten not more than once a day. Eggs may replace meat for adults. Fish, fowls and sea food should be used, avoiding scallops and the very tough mussels.

(h) Water is not usually considered as a food, but is used at meal times, and hence is included here. Do not drink cold water just before eating. After the meal is started with some warm food, small quantities of water may be taken. Drink four glasses of water daily between meals.

Food should be chosen to meet individual needs. The following should be noted: Persons who suffer from constipation will find it helpful to regulate the diet. Regulation by food will be more healthful than regulation by pills. Such persons should omit from their diet the following:

1. White flour bread (hot). Pastry made with lard and baking powder preparations. Cake and custard puddings.
2. Meats: salted, dried and smoked meats, poultry, salted and dried fish.
3. Vegetables: beans (dried).
4. Cereals: rice, farina.
5. Miscellaneous: cheese, cocoa and chocolate, milk boiled, tea, coffee substitutes made of wheat, corn and barley.

Constipation should be combated by choosing a diet from the following:

1. Whole wheat and graham flour products.
2. Fruits, such as prunes (dried), peaches (dried), and stewed fresh fruits of all kinds.
3. Vegetables, such as beets, celery, corn, cauliflower, onions, peas (green), rhubarb, spinach, squash.
4. Meats, such as wild game, rabbit, duck, pigeon, quail, deer, etc., liver, oysters.

Persons who are overweight should omit from their diet: cream soups, potatoes, gravies, milk, butter, sauces, sugar, desserts, cereals, and should eat fresh vegetables, fruits and some meats and stock soups. As the weight approaches normal, the diet may be modified accordingly.

Those who are underweight should include in their diet: cream soups, gravies, potatoes, cream, milk, butter, sugar, cooked cereals, in addition to fruits, vegetables and meat.

Persons with excessive acid formation should eat food containing base-forming elements, such as milk, vegetables and fruit.

It should be noted that vitamins are to be secured from food that has not been treated, processed, or preserved. Do not expect to get vitamins in tablets. There is no short cut here. Eat plain, wholesome food, as indicated in Rule II, and vitamins will be in abundance.

To rely on tablets for vitamins or iron is a serious mistake. Advertised widely, such preparations accomplish the real purpose of the manufacturer when they are sold. They serve no health purpose whatever.

Rule III. Intelligent Care of Body

There are many losses in health due to lack of proper care of the body. While the following is not inclusive, it does give the essentials. No exceptions should be permitted to occur.

1. The teeth should be brushed on rising and on retiring, and also after each meal. All decayed teeth should be filled. This practice may not keep the teeth from decay, but it will help to keep the mouth clean.
2. A daily bath should be taken. For most persons the morning cold tub or shower will be best. Individual inclinations may be permitted. All should bathe daily, at least for esthetic reasons. While bathing may not be indispensable for health, nevertheless the sense of well being that follows a proper bath is an item in mental hygiene of real significance.
3. The bowels should move daily. Persons neglecting this will find a distinct lowering of efficiency. This act should be performed in the morning, immediately after breakfast. It is best to have a regular habit.

4. Intelligent planning will provide for vaccination against smallpox and typhoid.

5. Avoid sneezing or coughing in the face of others. Be careful to protect yourself. All unprotected coughs or sneezes are sources of danger to others.

6. Attention should be given to have the tonsils in good condition. If diseased they should be removed.

7. The importance of being well shod cannot be overestimated. Shoes to fit the feet will add materially to comfort, well being and power.

8. If your body becomes diseased, frequently evidenced by pain or inability to work or play, you should consult an able and reliable expert in looking after disease.

Rule IV. Rest and Sleep

"Sleep that knits up the ravelled sleeve of care,
The death of each day's life, sore labour's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast."

The basis of a good game is abundant energy. Rest and sleep are essential for the building of energy. Players in the game of life who are fatigued will find less joy and less accomplishment in life. Rest one half hour before and one half hour after meals is often desirable for many. It is difficult for all to secure.

Sleep is the best way of resting. Most persons find the following schedule satisfactory:

Age	Night Time	Afternoon Nap or Rest	Total Hours
4 - 6	6-7 p. m. - 7 a. m.	1 hour	13 - 14
6 - 8	7-8 p. m. - 7 a. m.	1 hour	12 - 13
8 - 10	7:30-8 p. m - 7 p. m.	½ hour	11½ - 12
10 - 12	8-8:30 p. m. - 7 a. m.	½ hour	11 - 11½
12 - 14	8:30-9 p. m. - 7 a. m.	.....	10 - 10½
14 - 16	9-9:30 p. m. - 7 a. m.	.....	9½ - 10
16 - 18	9:30-10 p. m - 7 a. m.	.....	9 - 9½
18 or over	10-11 p. m. - 7 a. m.	.....	8 - 9

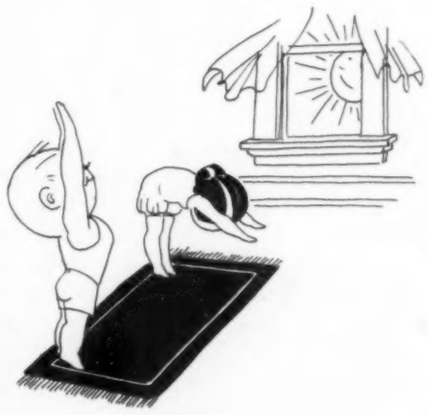
If for any uncontrollable reason one cannot sleep, stay awake. Get up and read, but one should not worry because one cannot sleep. Avoid the causes that produce wakefulness—coffee, excessive smoking, mental tasks, indoor sedentary tasks, worry, and engage in physical exercise out of doors to be followed by a hot bath afterward.

Rule V. Thinking Straight

Many of the disorders in life, affecting happiness as well as health, result from crooked thinking. To keep values in proportion, to dominate the minor with the major interest are difficult accomplishments; they are essential, though, in achieving balance, harmony, and intelligent self-direction so characteristic of the man or woman of power.

The following is suggestive of significant points to keep in mind:

1. Avoid worry. People worry over things which they cannot help, which is a futile thing, or over things which they can help, which is stupid procrastination. To avoid worry, one must persistently refuse to sanction the emotional guides, and must consciously strive for the dominance of intellect over the situation.



2. Confidence is necessary. Confidence and belief are producers of energy. Every time one's signal is called, and the ball passed, one should feel that this play will score a touchdown. In the face of repeated failure, one should consider one's fitness for the task attempted. Much of the dissatisfaction in life comes from doing the thing for which one is not prepared. Belief in self, in one's own intrinsic worth, in one's value to the world helps greatly; likewise, belief in the integrity of the game and faith in the goodness of life. This does not ask for the ignoring of facts. It is still too true that many fouls are committed in the game, much of life is ugly, mean and sordid; but these sores and disasters only call for effort on the part of one who has faith that it can be played cleanly, and is willing to help make it be so.

3. Another item of tremendous value in the normal mental life is unselfishness. While one may approve unselfishness on social or moral grounds, it has just as valid and more powerful sanction on biologic ones.

Unselfishness is nowhere needed more than in one's attitude toward one's health. Too much thought about health, about bacteria, about disease is distinctly unwholesome. There are some persons who refuse some of the most precious and enriching experiences in life for fear that such may entail some expenditure of strength, some loss of vitality. Child bearing, service to others in need, creative work demand forgetfulness of self. They give a significant meaning to one principle of the great Teacher who said, "He that would save his life must lose it."

It is in precisely this kind of situation that there arises the need for a nice adjustment: to balance one's effort between a reasonable regard for infection, for injury, and a really useful service to the world. Somewhere between these two extremes lies that golden mean that calculates life's hazards and opportunities, as the athlete measures the obstacle to be surmounted and the prize to be won.

To avoid colds, to evade pneumonia, to escape Bright's disease are pathways not to Nirvana, but to that condition of physical superiority that is justified only by service, and finds its fullest and best satisfaction in worthwhile work.

4. The unwillingness to face unpleasant problems brings many difficulties. One should resolve to meet the problems presented, to avoid the circuitous route. Theodore Roosevelt's motto, "Over or through, never around," sets a good standard.

Thinking straight requires that one live here and now. The burning, living, throbbing present demands action. The drab souls caught in the chain of ruthless routine, with a past of dead hopes, and a tissue-future of unbelieved dreams, need the self-realization of the fact, the reality, the concreteness of life.

Evasion, postponement court future disaster.

Optimism and courage in the face of difficulties may be achieved. They are urgently needed by all, because for every one, some time, "the nettle must be grasped." (Read Robinson's "My Brother, Theodore Roosevelt.")

(Part II in the April issue will take up exercise.)

Will the Movies Supplant the Teacher?

FRANK N. FREEMAN

IMPROVEMENT of education is important from the standpoint of the conservation and improvement of health in several ways. In the first place, the procedure of teaching or of learning may be carried on in such a way as to be prejudicial to the child's health. Reading too fine print or writing with one arm on the desk and the other hanging at the side is harmful, the one because it causes eyestrain, and the other because it produces curvature of the spine. Any method of instruction must be considered from the point of view of its direct effect on the pupils' health.

In the next place, education has an important bearing on health for it is through education that the child gains information concerning the laws which govern his body and the rules of its proper management, so necessary for him to have if he is to guard his health intelligently. General recognition on the part of the American people of the harmfulness of excessive indulgence in alcoholic beverages is very largely due to the public school instruction of the past generation on this subject.

Movies May Indirectly Affect Health

Again, anything that increases the efficiency of education in general, even though it may not bear directly on physical habits or give immediate information on physiology or hygiene, will operate to raise the general level of health of the community by raising the general level of intelligence.

The person who is trained in scientific thinking and has formed the habit of carefully sifting the evidence on which his opinions rest is in some measure protected against quacks and charlatans, and also against generally false or one-sided philosophies of life. Superstition does not grow readily in an educated mind.

Motion pictures in education have a bearing upon health in all three of these ways.

We need to examine them to insure against possible injury to children's eyes from looking at them.

They constitute means, already used both in the school and outside the school, of direct instruction in health.

Finally, they are widely advocated as more efficient means of general education than the methods which have prevailed in the past—the oral lecture or discussion, the printed text or demonstration and laboratory work.

We shall deal in this article mainly with the last question—the general efficiency of motion pictures as means of teaching.

Scientific Study of Movies

Conclusions regarding the value of motion pictures in education which will be set forth are based on a

rather extensive set of experiments in the public schools, which have been made during the past year and a half.

In view of the larger possibilities which apparently lie in this new method of presenting facts and of the larger claims which are made for it, an educational foundation, the Commonwealth Fund, granted in 1922 a sum of money to the University of Chicago to be used for the purpose of investigating their educational value.

In the study which ensued, and which is reported in a technical monograph,* experiments were made during the period of a year in several of the large school systems in the country.

When a new educational method or device is introduced, extravagant claims are apt to be made for it. We like to feel that at last we have found the one easy, rapid and effective method, the cure-all for our educational ills. Some such claims have been made for motion pictures, and these claims have had wide publicity on account of the prominence of the men who set them forth.

Edison and Wells for Movie Teaching

Some time ago Mr. H. G. Wells, in an article on education, predicted that we should, in time, teach entirely by motion pictures. The great advantage of motion pictures, Mr. Wells feels, is that they can be made by experts, and that they can then be distributed broadcast and can be shown to their classes by teachers who themselves have meager training and poor ability. But he overlooks the question whether motion pictures are adapted to all types of teaching and whether in substituting a mechanical instrument for a teacher, even a mediocre one, we may not lose a vital factor in teaching.

Mr. Edison has also made pronouncements on the value of motion pictures in the school. If the newspaper accounts of his statements are correct, he regards motion pictures as a much more effective means of instruction than any other, and has substantiated his belief by using motion pictures to teach certain lessons in chemistry to a class of a dozen boys.

The question, of course, is not whether chemistry can be taught by means of motion pictures. It is whether it can be taught better by motion pictures than by other methods. Mr. Edison says that some parts of the picture had to be shown repeatedly, but he did not teach the lessons to a parallel group, by some other method, in order to determine whether it was more, or less, effective than the motion pictures.

Not Likely to Supplant Teacher

The first aim of the investigation which was referred to in an earlier paragraph was to answer such questions as these. We need not dwell long on the answer to the general question whether motion pictures are so markedly superior that they are likely to displace the teacher and the textbook. They are not, and their more sober and scientific advocates do not claim that they are.

* Visual Education; A Comparative Study of Motion Pictures and Other Methods of Teaching, published by the University of Chicago Press.

The personality of the teacher is more effective in holding the interest and attention of the pupils than is an impersonal series of pictures. The textbook is as effective for some kinds of instruction, and is much more convenient and cheaper than the motion picture.

The average person forgets, in passing judgment on the usefulness of motion pictures in the school, that a film which has instruction for its purpose is a very different thing from the entertainment "movie." The entertainment movie aims to give thrills. The educational movie aims to give information. Even the short so-called educational or news reels shown in the theaters are very inadequate for the purposes of the school. The information which they give is scrappy and unorganized, and makes very little genuine contribution to knowledge. The real educational film makes a much greater demand on the child's power of attention and is much less entertaining.

But we must not emphasize the negative side of the issue more than is necessary to correct the impression that motion pictures are destined to overturn our whole method of instruction. Though they will never do this, they do have a very definite and an important part to play in instruction in the up-to-date school.

Help Child to Form Mental Pictures

To realize their value let us go back to an old and well-recognized idea in education, but one which is not always put into practice. This idea is that we must learn about things in the first place by coming into direct contact with them—by touching, lifting, listening to, tasting, smelling and looking at them.

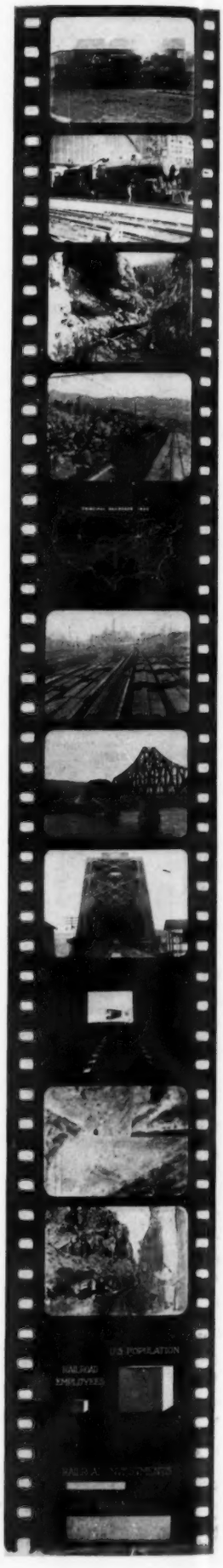
All this we call concrete experience. There is no substitute for it. We cannot get adequate conceptions of the qualities or material characteristics of things through being told about them. The attempt to use words as substitutes for contact with things is sometimes made, but it produces a type of mind which is content to substitute imagining for facts.

Of course there is another sort of instruction, which aims at the development of thought, and in which language is necessary. To neglect this produces a mind that is unable to generalize. But we must be content with the bare statement of that side of the case and pass on to show more definitely how motion pictures may be used to give to instruction the solid foundation which it needs.

To show how motion pictures may serve to supply the necessary contact with the things of the material world, and in this way give reality to the child's mental life, let us make a few illustrations.

In one of the experiments which was made to test the value of motion pictures, several films were compared with oral lectures by the teacher. This was done by showing the film to one section of a class and teaching the same facts orally to another section which was equal in ability. The contrast in the outcome of this comparison in the case of two of the films is instructive.

One of the films which was compared with the oral lesson was on the evolution of boats and ships. It told the story of their development, beginning with the logs, the rafts and the dugouts, and following it through



canoes, sailboats and steamboats down to our present-day leviathans of the deep. Now this film seemed to be a good one. It was well-constructed and interesting. It would ordinarily be selected as a good example of educational films. But it did not prove to be as effective as the oral lesson.

No Aid with Familiar Objects

What is the explanation?

It seems to be this: The film dealt with objects with which the children were already familiar. They had seen the boats which were pictured in the film, or had seen other pictures of them or had seen objects which gave them the basis for understanding the facts. For example, if a child has seen logs, or even trees, he may be able to construct a mental image of a man astride a log in the water which will be as serviceable to him as the sight of a picture of a man on a log. We sometimes underrate the power of imagination to reconstruct past experience for us or even to create experiences which are different in their form from any we may have had.

Helped to Supply Background

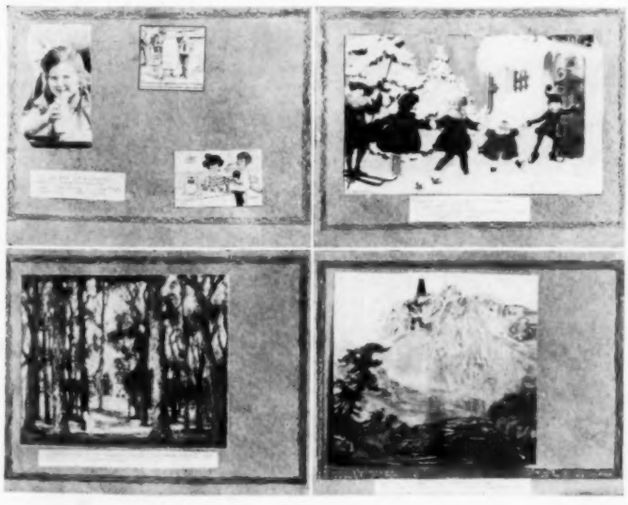
Another of the films, in the same experiment, gave quite a different result. It was entitled "Through Life's Windows," and dealt with the structure and function of the human eye. In this case, the children who saw the film passed a much higher test than did those who were taught orally.

The inferiority of the oral lesson was undoubtedly due to the fact that the children had not seen eyes dissected, or examined models or studied pictures or diagrams of the eye. They therefore did not have a sufficient background in perception to enable them to construct true and vivid images or clearly to understand the verbal descriptions which the teacher gave them. Such a background must be supplied when it is lacking.

Two other illustrations from subjects of teaching which are of importance for health are instructive. The first one deals with teaching position in handwriting. As has been clearly demonstrated, the way the child sits and holds his head has a direct bearing on his physical well-being in ways which there is not space to dwell on here. Furthermore, it is not a very easy matter to train children in habits of sitting properly.

Great Aid in Teaching Action

In order to study the possibilities of the motion picture in a field somewhat outside the ordinary run of instruction and in one which seems well adapted to it, a film was produced for the purpose of the experiment which showed a variety of good and poor positions in writing, together with captions which pointed out which were good and which were poor. This film was shown to several hundred children. The position of the children was carefully scored by means of a score card before they saw the picture and after a period of several weeks.



"Milk is good for children
Morning, noon and night;
Makes them strong and healthy
Keeps them feeling right."

"In the hope of finding the Gnome again they follow the old familiar path."

"This is the door to sturdy health,
To happiness and joy;
The Knowing Gnome would point the way
To every girl and boy."

"And to this day from mountain heights
The Knowing Gnome still directs little children
Into paths of health and happiness."

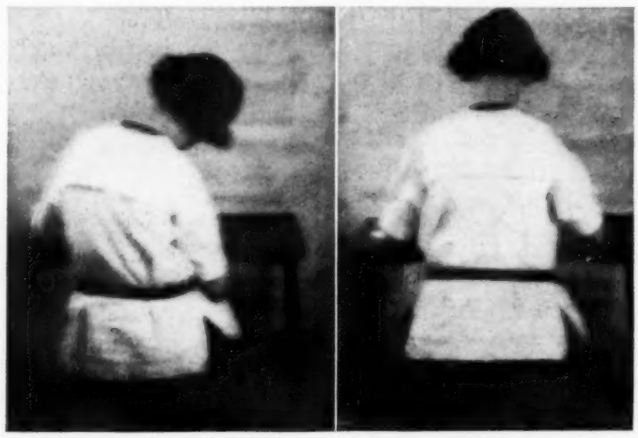
In an experiment on health education, children were given the above four captions from the film "The Knowing Gnome." The four pictures at the left were made up by the children to illustrate the captions. They had not seen the film, four scenes of which are reproduced at the right. The appropriateness and imaginative appeal of their original illustrations are easily noted.

The progress they made was compared with that of two other groups which received ordinary instruction. The film group made about fifty per cent. more progress than did the others. Evidently motion pictures may constitute an effective means of teaching children to perform an overt act.

An Experiment in Health Instruction

The other illustration is from more direct instruction in health. In a good-sized school system a drive was being made to develop health habits, particularly those which relate to eating food of proper kind and quantity, getting plenty of sleep in fresh air and sufficient outdoor exercise. Much visual material is used in such instruction and a good deal is created and supplied by such organizations as the American Red Cross.

The particular problem which was attacked in the experiment was whether the instruction would be made more effective by using eight motion picture films, in addition to the other devices. These films all related directly or indirectly to the subject of instruction. In most cases they were produced for such instruction. All the instruction in health for the period of six weeks was the same for two large groups of children, except that half of them saw the films and the other half had oral reviews in place of the films.



These two illustrations are from a film which was used to teach position in handwriting. At the right is shown the upright position of the body, with both arms on the desk. At the left can be seen a distorted position of the body, with the spine badly bent, owing to the fact that one arm does not rest on the desk.

The tests were of several sorts. The increase in weight was carefully ascertained. Information on the faithfulness with which the children carried out their instruction was gathered. Finally, a test of their knowledge concerning the principles and rules of hygienic living was given them.

Contrary to what one might expect, the groups which saw the films made no better showing than did the others. In fact they seemed to make a somewhat poorer showing.

What is the explanation? We may perhaps get a hint of it from a description of the achievements of some of the children independently of the film. They all were told the story of the film, whether they saw it or not, and then they were encouraged *to find or make up illustrations for it themselves.* Their success in doing this was astonishing.

In making up their illustrations the children got an entirely adequate idea of the subject, and the activity which they went through impressed it strongly on their minds. It appears that, in this case, the films were not necessary in order to give them a background of concrete experience, and passively watching the films did not add anything of value to the effect of their own exertion and effort.

It appears, then, that we must give a qualified answer to the question: "Are motion picture films effective modes of instruction?"

They are, in certain cases, or under certain conditions.

Whenever the child has not observed or does not understand an action, an operation or a process, and whenever the action is not accessible to direct observation, the motion picture film is a valuable means of making it clear to him. Many motion picture films now in existence are valuable on this ground, and many unexplored fields are still to be illuminated by them.

On the other hand, a motion picture film is not an effective means of teaching just because it is a motion picture. Many very ineffective films are in existence—films which were produced on purpose for use in the school. Some of them are not chiefly concerned with showing motion, and some of them deal with subjects with which the child is already familiar.

These constitute a poor investment of educational funds.

No Substitute for Living Teacher

Furthermore, we must remember that there is no substitute for the living teacher. Common observation indicates this and our investigation demonstrated it repeatedly.

The motion picture is a *valuable instrument to be used by the teacher, but it is not a satisfactory substitute for the teacher.*

The fact is that motion pictures like all other educational means must be developed with discrimination and with constant experimental testing of their results.

So developed, they will be found to have a distinctive value and will take their place by the side of the blackboard, the textbook, the map, the slide, the stereograph. In such a relationship they will add to the ever increasing effectiveness of our marvelous system of education.

Happy Health Education in Detroit

ETHEL PERRIN

Take me out to the ball game,
Take me out to the grounds.
Buy me some peanuts and crackerjack,
I don't care if I never come back.
Hurrah! Let's root for the home team.
If they don't win it's a shame.
Now it's one, two, three strikes, you're out!
—At the old ball game.

TWO days after the last baseball game of the 1923 World Series, the national sport invaded the precincts of the Hotel Statler, Detroit. The orchestra played "Take me out to the ball game" and the fun was on. There were about six times the usual baseball nine on this team of Detroit public school boys. Their balls and bats were delightful figments of vivid imaginations, but what did it matter that the game was only a pantomime, since there was a spirit so real! Catchers and pitchers exchanged signals; batters warmed up before clouts that struck imaginary balls over the fence for homers, men on second stole third, and finally, amid cheers of encouragement, came sliding home. And, lest one bit of realism be too sadly missed, even the umpire came in for his share of ragging.

The pantomime ball game was a part of a demonstration of the present health-education-through-play methods in use by the department of health education of the Detroit public schools. This program was given on October 15 before the first annual meeting of the American Child Health Association. It told, perhaps, as complete a story of today's health education in Detroit as can be told.

"Things 'ave Took a Turn"

If the cockney parrot of Dickens fame could have lived thirteen years ago to watch an exhibition of school physical training as it was then taught in Detroit, and then could have been present at this recent demonstration, he would have chattered his satisfaction in his same glad refrain, "Things 'ave took a turn!"

In the old days, physical training in Detroit schools was confined to the "Hips firm, shoulders firm, one, two three, four," formal type of exercise which could be cramped into ten minutes of each school day, and crowded in the narrow space between two school aisles.

The classroom teacher was wholly responsible for the training in hygiene and in physical education. She might have been narrow-chested and scrawny, a product of the indoors and admittedly bored with this extraneous subject that had crept into her curriculum. However, she conscientiously taught the children dusty hygiene facts which hadn't anything to do with baseball or any other play activity that was naturally interesting, and she put them through their daily ten minutes, with the idea that some day they would show off to her credit in her hour of need. Perhaps, too, this was all that was expected of her, for somewhere in the scheme of things the child's needs, or certainly his interests, had been lost sight of.

A single supervisor of physical education went from school to school on scheduled time to "observe" and to "criticise."

Then there dawned a new ideal in physical education. During the past thirteen years, the single staffed department of physical education has expanded until it now comprises 350 trained members. Detroit's physical education is a thing so completely changed in purpose and achievement that the department has sloughed off even its old narrow name and has blossomed forth as the health education department.

Sixty Minutes of Games Each Day

Health education in the schools of Detroit is a free subject. It is alive and spontaneous. It is fascinating, and even exciting. It permeates the whole of study. Health smiles out from behind posters seen and created in the art room; it trips along with the tunes of music lessons; it is written into the themes of the English compositions; it is acted out and staged in original classroom plays; it gets cut out and stitched into the products of the sewing class; it is cooked into the dishes of the cooking class and hammered and nailed into the work of the boys in manual training.

The descendant of the tiny ten minute period of formal exercise between the classroom desks is a daily sixty minutes of games, stunts or natural exercise out of doors or in the gymnasium.

The playground, the gymnasium, the swimming pool, the track, the baseball diamond and the tennis court are the natural media

through which health is achieved. The all important health facts are dressed up or disguised, if you will, in their playful best. They are introduced as a new game in which every one has a chance to pile up a favorable score.

Intra-school games and competitive athletics between elementary and high schools are doing their share to raise general standards of health. The same desire to play on the team and to win which makes the professional baseball player or the college football player submit gracefully and willingly to the training rules of the coach makes the school child want to take his bath, eat his fruits and vegetables, drink his milk, take his outdoor exercise, brush his teeth daily, and sleep his ten hours with windows wide open. This is the big handle upon which the health education teachers are taking a firm grip.

Plenty of Teams for All

This incentive, by the way, appeals not only to the few select players on the top picked team, but to the vast majority of the children. For there are teams enough for all—first teams and scrub teams, school teams and class teams. The superteams are only an incidental result of the fundamental plan of democracy in athletics. Who plays is more important than who wins.

Stunts are being reincarnated as an important part of the Detroit program. The neglected cat that might have feared he had had his last skinning on that day when the transformation of the attic in father's boyhood home demanded that the horizontal bar be permanently removed from its accustomed place in the doorway, now gets skinned every day in the gymnasium. Crab Walk, Fish Hawk Dive, Cart Wheel, Gorilla Swing, Wheel Barrow, Elephant Walk, Human Bridge, Windmill, Rocking Horse, the Pyramids and a host of other individual and group stunts are providing exercise for every muscle.

The very picturesqueness of their names arouses an interest in them and the desire to do them proficiently. Moreover, the pupils derive a delightful pleasure and immeasurable benefit from working out and naming new stunts to spring on the instructor or the audience at a demonstration.

Boys and girls who have posture defects, such as narrow chests, weak backs or weak feet, are cared for by individual instruction or in special small group classes. They do not participate in the general class exercises until the instructor is sure that the regular work would have no ill effects on them and would be of benefit to them.

Those who need special remedial or limbering exercise are given home assignments by the instructor of physical education just as they are given home work by the teacher of mathematics or geography.

Although there has never been conclusive proof that girls should have a less strenuous athletic program than boys, nevertheless there is a general belief that programs should be adapted to structural sex differences. Accordingly, the physical education program for Detroit girls differs from that for boys. The girls are instructed by women only. For all of their games they are coached by women. They do not compete with boys on the field or in the gymnasium. They have their own stunts and they have likewise an original game program which is not simply an imitation of that of the boys.

Big Contests Twice Each Year

Detroit's semi-annual athletic contests, the Decathlon for the boys and the Pentathlon for the girls of the seventh and eighth grades, are adding no small share to the health and the athletic ability of school boys and girls. The spirit which pervades these long-looked-forward-to events has been compared to that which must have existed at the ancient Greek Olympics. These contests are judged by a point system, so that every boy and girl coming up to a required standard may win a gold, silver or bronz medal or an arm band. There is no individual competition here; one's gain is not at the price of another's loss. Those who have learned to lose in a sportsmanlike manner to a rival team on the field may here get a deserved recognition of their athletic prowess.

What may seem at first to be a matter of detail in the Decathlon and Pentathlon systems of point awarding, is in reality a fundamental of the Detroit program. Points have been worked out so that there is such a gradation of awards for achievements that the scores are encouragingly generous until average attainments are reached; above the average, increases are relatively lower. For the Detroit health education department is much more anxious that a boy or girl should approach an average record in a

number of events than that he or she should be unusually proficient in one or two and far below average in the majority. The lone champion of one athletic event who is a dub in most others has no chance for covering himself with glory in these contests.

Fairy Games for Wee Pupils

All of the rhythmics of classes from the first grade up through high school have been related to the pupil's play experience. Baa, Baa, Black Sheep, Goosey, Goosey, Gander and Little Miss Muffit are sung and acted out with joyous abandon by the children of the early grades who would have been left uninspired by the artificiality of the old commands of "Arms forward, outward, upward and downward, in eight counts." How much more fun it is to be Miss Muffit, for example, if you happen to be a little girl, and to dance about to that nursery song, take your place on an imaginary tuffet and sit there eating make-believe curds and whey until a big little-boy spider crawls in on all fours and frightens you away!

And at other times, to gay, jerky music, you may be one of a row of little girls charged with the seemingly impossible task of keeping a row of tantalizing little-boy Jacks-in-the-Box down in the boxes where they belong. Down, down, down, you push your Jack until he is all the way in. But when you lift your hands, convinced that you have done the trick, up he pops again. Time after time you go through this happy nonsense until the music tells you that it is time for your inspirational coup d'etat. Down, down, down you push him for the last time. Quickly you clamp down an imaginary lid, and *voila,* you keep him in by the weight of your own little body, perched upon it.

Surely, whether one is young enough to be included in the nursery rhythm class, or old enough to play the health game in stunt and baseball drill, getting physically educated and health educated in Detroit schools today is unquestionably much more fun, and much more successful, than it was in those days before things had taken a turn.

How Does Your Town Rate on Typhoid?

IN NORFOLK, Virginia, during 1923 there was not a single death that could be traced to typhoid fever.

Providence, Rhode Island, with a population between 200,000 and 300,000 had only two deaths due to typhoid during the year.

How did your town rate?

If you live in a city with a population of more than 100,000, you will find its typhoid fever record of the past year in the table prepared by the *Journal of the American Medical Association.*

Atlanta, Georgia, had the worst year of any of the 69 cities included in the table. Seventeen persons out of every 100,000 died of the disease during the year.

Most of the cities, however, are showing a steady decline in the death rate.

Records on 57 of the 69 cities have been kept by the American Medical Association since 1910, and they show a tremendous decrease in the death rate during that period.

In 1910 some of the cities had as many as 65 deaths per 100,000 persons due to typhoid fever. Pittsburgh, for example, among such cities, now has a typhoid death rate of only 3.7 per 100,000.

Further reduction in the death rate, of course, will not be rapid, but it is evident that improvement is still taking place in a number of cities.

The greatest need, the survey shows, is in keeping down typhoid in country districts and small towns. To eradicate rural typhoid is, of course, difficult but not impossible, and many county health officers are working to stamp out the disease in country districts.

DEATH RATES FROM TYPHOID IN 1923
Cities of More than 100,000

Honor Roll (from 0.0 to 2.0 deaths per 100,000)			
Norfolk	0.0	Akron	1.4
Des Moines	0.7	Bridgeport	1.4
Hartford	0.7	Grand Rapids	1.4
Providence	0.8	Scranton	1.4
New Bedford	0.8	Springfield	1.4
Yonkers	0.9	Jersey City	1.6
Kansas City, Kan.	0.9	Cleveland	1.7
Boston	1.0	Philadelphia	1.7
Minneapolis	1.0	Chicago	1.9
Milwaukee	1.0	Rochester	1.9
First Rank (from 2.0 to 5.0)			
Syracuse	2.2	Albany	3.4
Newark	2.3	Louisville	3.5
New York	2.4	Dayton	3.6
Seattle	2.5	Cambridge	3.6
Indianapolis	2.6	Pittsburgh	3.7
Worcester	2.6	St. Louis	4.0
Lowell	2.6	Detroit	4.0
Wilmington, Del.	2.6	Salt Lake City	4.0
Reading, Pa.	2.7	Camden	4.0
Portland, Ore.	2.9	Fall River	4.1
Paterson, N. J.	2.9	Buffalo	4.3
San Francisco	3.0	Baltimore	4.3
Los Angeles	3.1	Columbus	4.6
Cincinnati	3.2	New Haven	4.6
St. Paul	3.3	Fort Worth	4.9
Oakland	3.3		
Second Rank (from 5.0 to 10.0)			
Denver	5.2	Youngstown	7.6
Omaha	5.4	Birmingham	7.7
Richmond	5.5	Spokane	7.7
Tacoma	5.9	Houston	7.8
Washington	6.0	New Orleans	8.7
Toledo	6.0	San Antonio	9.8
Kansas City, Mo	7.1		
Third Rank (from 10 to 20)			
Dallas	11.6	Memphis	13.6
Trenton	11.8	Atlanta	17.1
Nashville	12.3		

What We Eat and Why

BERNARD FANTUS

EATING is the most important business of life, whether we like to admit it or not. Yet, strangely enough, most of us are not any more concerned about the whys and wherefores of food than the babe suckling at its mother's breast.

Now if it made no difference *what* we ate, the general indifference of mankind to the reasons underlying our dietetic habits might be more readily comprehensible; but, in point of fact, our food is a highly complex mixture that, to maintain health, must have a certain definite composition in quantity as well as in quality.

Marvelous that We Survive

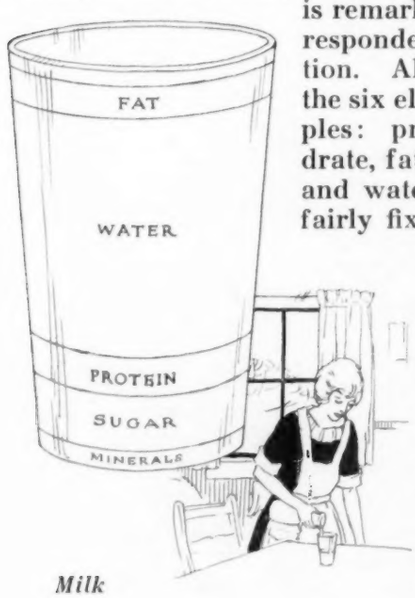
The marvel of it is that, though blissfully ignorant about these matters, mankind has survived all these ages. Unerringly, our inherited instincts and food habits seem to have kept us in the straight and narrow path of wholesome and adequate nutrition. Or, what is nearer the truth, those who erred did not survive to tell the tale.

"Eat in moderation foods you like best and cultivate a taste for foods you like least."

This is the advice of Dr. Fantus, who in this helpful article explains why the body needs milk, eggs, bread, fruits, vegetables and other staple articles of diet.

Nature, "so careful of the type, so careless of the single life," is so merciless in her punishment of our sins—dietetic and other—that the better we understand her commandments and the reasons for them, the better it is for us. In nature, as in a court of law, ignorance is no excuse.

To the uninitiated, the most remarkable thing about the food of mankind may seem its great variety and variability. Yet, when analyzed, it is remarkable for its correspondence in composition. All food contains the six elementary principles: protein, carbohydrate, fat, vitamins, salts, and water; and these in fairly fixed relative proportions.



Milk

Most important from the standpoint of quantity, as well as urgency of need, is water. A strong man may go for almost three weeks without solid food before he dies from starvation; he cannot go without water for more than three days. This is because "all cells live in water and in running water." Cells exposed to air die. We can live outside of water because we are protected against rapid drying up by a fairly waterproof dead covering, the horny layer of the epidermis. Beneath this live our cells surrounded, thanks to the circulation, by water in motion.

The most preeminent material in all living matter is protein; the word, indeed, meaning "preeminent." Life, as we know it, has never yet been found outside of structures of protein. Living protein constantly undergoes a certain kind of decomposition, or breaking down, which is the veritable chemical essence of the life process; this must be balanced by a continual building up, or the cell dies.

Green vegetable cells alone are capable of building up protein from inorganic material. All other life must get its protein from these vegetable cells. Thus all our food is derived from the vegetable world, either directly or indirectly after its passage through an animal body.

The vital energy displayed by cells is, however, not due chiefly to breaking down of protein, but to an oxidation within these protein structures of carbohydrate and of fat, which are chemically much simpler bodies than the protein. We might look upon cells as machines, built of protein, which burn carbohydrate and fat to produce power and heat as a steam engine burns wood and coal.

Those Mysterious Vitamins

Salts and the still mysterious, recently discovered vitamins must be present in the right kind and amount; otherwise life comes to a standstill or disease results. The secret of the vitamins was revealed to us by experiments on rats and mice, pigeons and other small laboratory animals.

Further study showed that there are at least three different bodies, of as yet unknown composition, present in certain of our foods which are in minute quantities essential to our well being and proper growth.

One of these is so delicate that heating and most other methods of food preservation destroy it. Lack of it causes scurvy, which can be prevented and cured by a substance contained in fresh fruits and vegetables. Lack of another vitamin causes beriberi. Rickets probably and

pellagra possibly are due to vitamin deficiency.

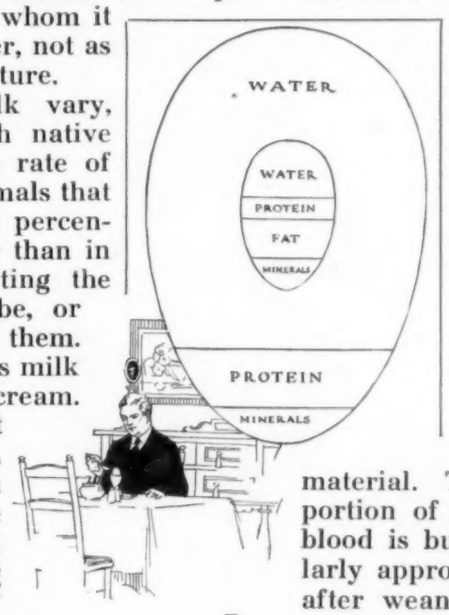
These vitamins are products of the plant world, though animals store them in certain parts of their body, as in the liver, and secrete them into their milk.

In view of all this, one may very well wonder how it is possible for a person who is not a chemist—and a physiologic chemist at that—to order proper meals. Fortunately nature has attended to this for us.

Milks of Various Animals Differ

Milk is a good example of the exquisite care nature takes in providing suitable food for those who cannot provide for themselves. It is a complete meal for infants, accurately balanced and adjusted to the requirements of the particular young creature for whom it was secreted. It is, however, not as suitable for any other creature.

Different kinds of milk vary, chiefly in accordance with native climate and the creature's rate of growth. In the milk of animals that inhabit cold latitudes, the percentage of fat is much higher than in the milk of those inhabiting the warm regions of the globe, or which originally inhabited them. Whale's milk and reindeer's milk are as rich in fat as is cream. Human milk, as well as that of the horses and the camel, is poor in fat and rich in carbohydrate. This, by the way, is one of the several biologic facts suggesting that the original cradle of the human race stood in a warm clime.



Egg

Cow's Milk vs. Mother's Milk

When we compare cow's milk with mother's milk, we find that cow's milk contains about three times as much protein and salts, *i. e.,* tissue building material, as mother's milk, evidently because the calf grows three times faster than the infant.

As the rate of growth of a creature diminishes progressively from the time of its birth, so does the proportion of tissue building material diminish with the progress of lactation. Hence, a wet nurse cannot well replace the mother, unless her infant is about as old as the foster child.

Cow's milk is, of course, still worse as a substitute for mother's milk, for not only is its composition different but it is also much harder to digest; it forms a larger and tougher curd in the stomach than human milk. Furthermore, while breast milk is clean and sterile as it enters the infant's mouth, cow's milk is likely to teem with micro-organisms, some of which may be disease producing.

Not to be nursed by its mother is therefore a great misfortune for an infant. The death rate among the bottle fed is very much higher than among the breast fed; and a bottle fed infant, though it survive, may have had such a poor start in life that it will never be as robust and well as it might have been.

Yet many a young mother carelessly robs her child of its most precious birthright—mother's milk—no doubt not realizing the harm she does; an illustration of the fact that the wages of ignorance are disease and death.

Milk Lacks Iron; Egg Has It

There is one important deficiency in milk, namely in regard to iron; the infant's body on the other hand contains an excess. It is as if nature would not trust this important food element to the chances of poor digestion and absorption and thus provided us with a little excess store of it at birth. When nursing is prolonged much beyond the ninth month, the store of iron becomes exhausted; and, unless the child is given appropriate additional feeding, it becomes anemic.

At this point, the importance of egg in diet may perhaps be appreciated. An egg has, of course, the same chemical elements as the chick that hatches from it; egg being almost pure tissue building material. The yolk contains quite a large proportion of iron, from which the little chick's blood is built up. Thus egg forms a particularly appropriate addition to the infant's food after weaning. When a person has become anemic from improper food habits, increasing the amount of egg eaten may make the taking of iron medicine superfluous. It should be said, however, that there are some children with whom eggs do not agree.

The chief deficiency of egg as food is that it contains no carbohydrate, or fuel for force production; the chick growing within the egg, of course, does not need it as it does not move. When egg is used as human food, this carbohydrate deficiency is corrected by eating it with bread or potatoes.

How Art of Cooking Began

The older the child gets, the less rapidly he grows and the more he exercises. Hence less tissue building material and more fuel for power production—carbohydrate—is required. This we obtain chiefly from cereals.

As man is not equipped with a gizzard like the grain eating birds, he needs his grain freed from its indigestible shell by some crushing process, as he discovered back in prehistoric times. He also found that raw starch did not agree with him as well as cooked starch and

with this began, we may imagine, the art of cooking. Plants store away the starch in tiny chambers of cellulose, and cellulose is quite indigestible in the human digestive apparatus. Cooking causes the starch to swell; it bursts the cellulose envelope and so the starch can be more readily attacked by digestive juices.

Thus man came to prepare different kinds of pap, gruels, or dough. It was another great step in advance when man discovered how to make a sponge from his dough, when he learned the art of bread making. It takes some time before a gruel becomes thoroughly mixed with the digestive juices, most especially if it is lumpy. A sponge soaks up fluid, and bread is digestible in the proportion it does so. Fresh bread is quite near the dough stage. Hasty chewing is liable to convert it into a rather indigestible lump. Stale bread, which can no longer be formed into lumps or pills, is more digestible.

But most digestible is toast, which being crisp is readily pulverized by the teeth, and being dry and porous greedily absorbs digestive juices. If bread is the staff of life, toast is the crutch for the digestive cripple.

Bread and Milk Diet Lacks "Ballast"

Bread and milk constitute almost a complete diet even for the adult. The chief disadvantages of such a diet would be that it is too bulky for the stomach and does not leave bulk enough in the intestine. As milk is almost 90 per cent. water, its bulkiness may be reduced by eliminating the water, as is done in the making of butter and of cheese. Milk bread, that is, bread baked from dough made with milk is more nearly complete nourishment than bread made with water. If bran is added to the bread, as in the making of bran bread, this increases the amount of residue, or "ballast," in the bowel, and thus corrects the constipating tendency of the bread and milk diet.

We have, however, other and more profitable ways of adding "ballast" to the diet: namely, by using vegetables and fruits. These furnish not only cellulose residue but also vitamins and alkali. By eating an abundance of vegetables and of fresh fruits we secure a liberal supply of vitamins.

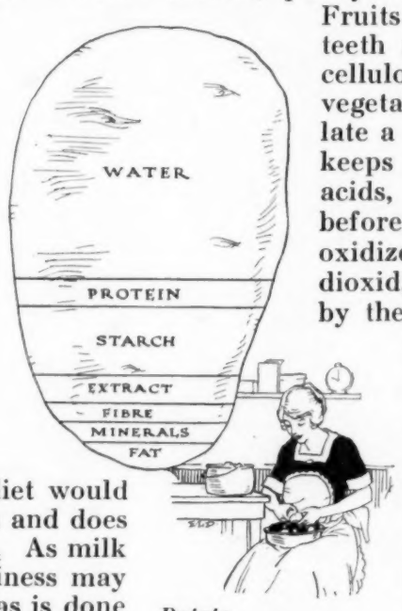
Fruits Little More than Sweetened Water

Fruits and vegetables also furnish alkali to neutralize the acids continually formed by the life process and introduced by animal food and cereals, which leave an acid ash. Vegetables leave an alkaline ash. It is well to have a liberal amount of alkali producing food in the diet, as it is believed that this lessens the tendency to kidney disease and to arteriosclerosis. Otherwise green vegetables and luscious fruits add little to our nutrition. The green vegetables are really the lungs of plants, and the fruits the means plants have of making animals disseminate their seeds.

It may surprise one to know that cabbage is a more watery food than milk, and that most fruits are really not much more than flavored, sweetened water. Exceptions to the last statement are: bananas, figs, dates, and raisins. These are rich in carbohydrate and therefore nutritious.

Persons inclined to obesity can make good use of these facts by filling up chiefly on green vegetables and the flavor fruits.

Dentists claim that fresh fruits are our best dessert, pastry and other sweets the worst. Fruits have a cleansing effect on our teeth not only by reason of their cellulose fibers, but also because the vegetable acids they contain stimulate a copious flow of saliva, which keeps the mouth clean. The fruit acids, be it noted, are acid only before they are absorbed. They are oxidized in the body to carbon dioxid, which is readily eliminated by the lungs without changing the reaction of the system.



Potato

Plants deposit their stores of nutriment in seeds and roots; in seeds to feed the offspring, in roots to start next year's growth. Man taps these storehouses for his own use. We have seeds particularly rich in carbohydrate, the cereals; seeds especially rich in protein, the pulses (peas, beans, and lentils); and seeds very rich in fat, the nuts.

Among the underground stores of nourishment, potatoes are the richest and most important. They compare with bread in being chiefly carbohydrate food; but differ from it in the reaction of their ash. Cereals have an acidifying tendency, while potatoes are alkalinizing. A liberal supply of potatoes in our daily ration is therefore of advantage.

Could Do Without Meat

Nothing thus far has been said of meat, because everyone could get along without it, though probably not quite so well. Meat is chiefly concentrated protein nutriment. To get a sufficient supply of protein from purely vegetable food, one would have to eat a larger bulk than the human digestive tract could handle conveniently, even if he made liberal use of the concentrated forms of vegetable nutriment, the cereals, the pulses, and nuts.

Though dry peas, beans, and lentils are so rich in protein as to have been called "the poor man's meat," they are a poor sort of meat substi-

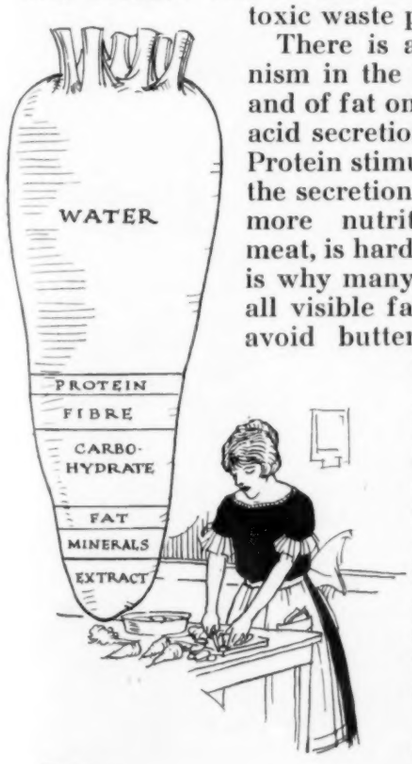
tute for several reasons. They take up water on cooking so that the dish finished for the table contains much less protein than does meat, which shrinks in cooking. It is indeed this shrinkage of protein on heating which accounts for the relatively poor utilization of vegetable protein as compared with animal protein. Vegetable protein is surrounded by indigestible cellulose; and, unless the cell also contains enough starch to burst the cellulose covering, the protein may escape digestion.

Cellulose is only broken down in the human digestive tract by bacterial action, which results in gas production. Hence the tendency of vegetable food to aggravate flatulence. The well known offensiveness of the flatus after liberal ingestion of pulses is due to bacterial decomposition of protein, at some of which the bacteria get first chance after decomposing the protecting cellulose.

Why Soup Starts the Meal

People like meat not only because it is easily digested, concentrated nourishment, but also because it carries with it, in its extractives, a stimulant to its own digestion. In the making of soup, these stimulants are separated from the protein, which becomes insoluble on cooking, so that soup is quite devoid of nutriment unless such is added to it.

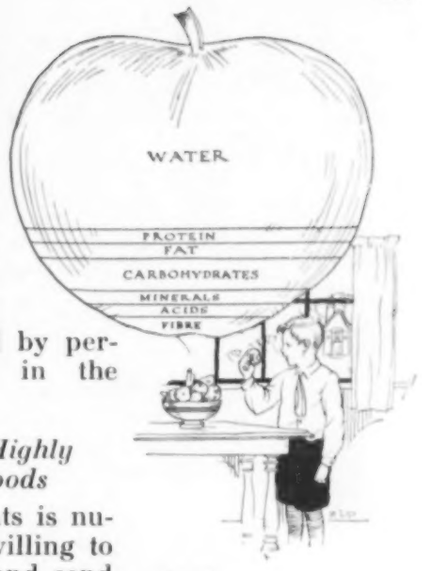
Because of its stimulant effect to digestive secretion, soup is used at the beginning of a meal; it also forms a good vehicle for protein nutriment, such as peas, beans, or eggs. However, meat and soup should be used in moderation, because excess burdens the system with toxic waste products.



Carrot

There is a curious antagonism in the effects of protein and of fat on the hydrochloric acid secretion in the stomach. Protein stimulates, fat inhibits the secretion. Fat meat, much more nutritious than lean meat, is harder to digest. This is why many persons trim off all visible fat from meat and avoid butter and other fat food when eating meat. Such people have allowed their stomachs to get into lazy habits, and they are likely to be undernourished and possibly nervous in consequence.

People who are stout are commonly the ones who eat the fat of meat and plenty of bread and butter besides. Habits evidently determine our shape as well as our destiny. Bad digestive habits can be corrected by persistent training in the right direction.



Apple

Adults Like Highly Seasoned Foods

Not all man eats is nutritious. He is willing to pay high prices and send to the ends of the earth for his spices and condiments just to impart taste and flavor to his otherwise almost tasteless nutriment. These food accessories are chiefly used because they stimulate appetite and digestion. They enable one to eat more and digest it more completely.

Is it better to use food as highly seasoned as possible or to employ the smallest quantity of seasoning that one can get along with?

Children, as a rule, do not relish strongly seasoned food. As one gets older he generally wants his food seasoned more and more highly, evidently because the digestive powers are becoming feebler. Inasmuch as condiments are potential irritants to stomach, liver, and kidney when used to excess, it behooves one to employ them in moderation.

Should Use Coffee in Moderation

The caffeine beverages, tea and coffee, when taken clear, are not nutritious. They stimulate gastric secretion, the central nervous system, the muscular system, including the circulation, and the kidneys. One could hardly imagine better general stimulants than these. No wonder mankind has discovered them in the various disguises they assume in the plant world; and once knowing them craves them.

It cannot be doubted that they help man in his struggle for existence when used in moderation, preferably as a breakfast cup.

In excess, and especially when frequently employed to keep one awake when he should be asleep, they are harmful. Cocoa is more of a food and less of a stimulant than tea and coffee; therefore it is less likely to be used in excess.

Though alcohol is oxidized in our system like fat and carbohydrate, it is too toxic to be classed properly as a food. Mankind craves it because of its narcotic qualities, which are capable of giving pleasure and of relieving pain. Unfortu-

nately, these same narcotic qualities directly lead to its use in excess, as it undermines and finally destroys self control.

Should Cultivate Taste for All Good Foods

These are some of the reasons why man's diet has become so complex and diversified. There may be other reasons as yet unrevealed to science. Certain it is that any one who so strongly cultivates his individual tastes in food as to neglect some of the important foods of mankind is running the risk of inadequate nutrition.

A person who takes pride in willingness and ability to eat any and all food good for humanity is a better human being, more fit to survive in the struggle for existence, than he who is hampered by diet idiosyncrasies. Hence, one should eat in moderation what he likes best; and cultivate a taste for the foods he likes least.

Curing "Rheumatiz" by Mail

The Interesting Case of the Two Cases

ARTHUR J. CRAMP

FOR ways that are dark and for tricks that are vain, the mail-order quack is peculiar." Thus might Bret Harte have sung had he chosen charlatans instead of Chinamen for his theme. The fallacy of attempting to treat disease on the mail-order plan is so obvious to the physician that he sometimes loses sight of the fact that those unfamiliar with the complexities surrounding the diagnosis and treatment of disease see nothing essentially impossible in the idea. The public is likely to think that because it can buy farm implements, wearing apparel, furniture and what-not on the mail-order plan, it should be possible to purchase relief from suffering via the mail carrier.

The inherent absurdity of the mail-order treatment of disease was never better expressed than by Dr. Cox, who, as the representative of the British Medical Association, appeared before the "Select Committee on Patent Medicines," a body appointed by Parliament to investigate the "patent medicine" evil in the British Isles. Dr. Cox said:

> It is impossible to treat diseases by correspondence. Lucky hits may, of course, be made; but most diseases have a large number of varieties, and each case demands individual study and individual treatment. Even if the persons advertising were qualified to treat diseases, which in nearly every case they are not . . . the conditions ordinarily preclude the hope of successful treatment. Treatment by correspondence . . . of necessity prevents the discovery of the actual disease, and resolves itself into the treatment of symptoms alone, a procedure which is always unsatisfactory, and may be dangerous.

In some of the cheaper weeklies that are not particular about the class of advertising they carry may be found a message to those who are suffering from rheumatism and neuritis. It comes from one Paul Case of Brockton, Mass.

Case's advertisement represents him in the uniform of the army of the United States giving the salute. On reading it, one learns that Mr. Case is a public benefactor. He has a prescription for the treatment of rheumatism and neuritis which he obtained from a "noted French physician" and which he will send to you if you will but take the trouble to send him your address.

The Rheumatism Cure of Jesse A. Case

Before describing in detail the philanthropies of Paul Case, a little not very ancient history will prove enlightening.

A few years ago, Paul Case's father, Jesse A. Case, was selling an alleged cure for rheumatism, "Case's Rheumatic Specific." The business was a piece of fraudulent mail-order quackery. As long ago as 1914 the American Medical Association analyzed the nostrum sold by Case Senior. His "cure" consisted of two boxes of pills, one the "Rheumatic and Gout Pills" and the other "Bilious and Liver Tablets."

The elder Case in those days advertised: "I am the man that conquers rheumatism." Part of his advertising thunder was the imposing title "F.S.Sc. (Lond.)" which he put after his name. These mystic letters, Jesse A. Case explained, meant that he had been honored by being elected a "Fellow of the Society of Science, Letters and Arts of London"—all of which sounded imposing and erudite. The facts are, the "society" in question was a seriocomic fake; its "fellowships" sold at a guinea apiece. Not a few American "patent medicine" venders dangle "F.S.Sc. (Lond.)" after their names.

Five years after *The Journal of the American Medical Association* had exposed the quackery of Jesse A. Case, the federal authorities declared his business a fraud and debarred him from the use of the United States mails. Within a month Case made application for the revocation of the Post Office Fraud Order,

declaring that he had entirely discontinued his fraudulent business and making an affidavit that he would not revive it any time in the future. The fraud order was revoked in September, 1919. So much for Case Senior.

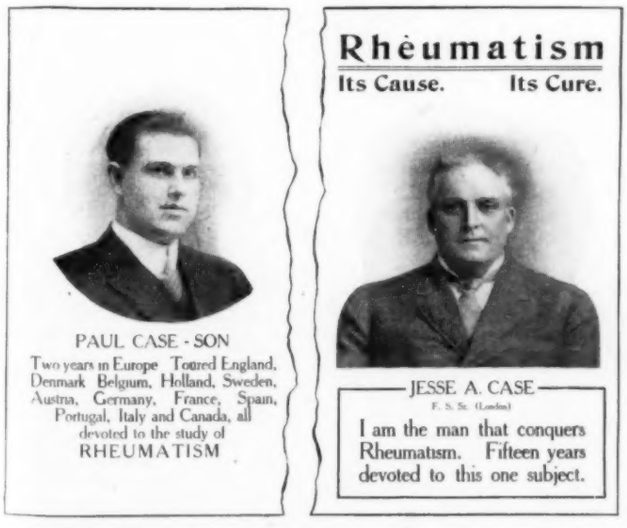
The Rheumatism Cure of Paul Case

Reverting to Paul Case: Should you answer his advertisements you will receive a letter printed in imitation typewriting. In this Case tells you that he is "not a doctor, healer or medical scientist" and has "never had a single rheumatic pain or symptom of the disease" and hopes he never may, but he has seen so much "of sickness and suffering" that you will not wonder at his sympathy for his fellow men.

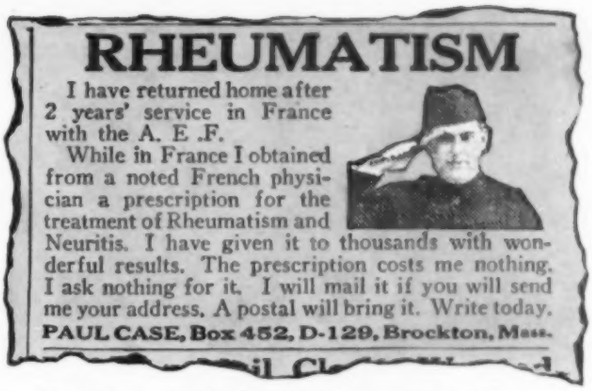
Then follows what purports to be a brief biography. From this you will learn that, after leaving high school, Case joined the Massachusetts Nautical Training School and took a two years' course in electrical engineering and that the ship on which he served during that time visited a number of European countries.

Here we must for a moment again turn back to the business of the elder Case. Jesse A. Case used to feature his son Paul in the advertising and declared that the two years that the young man had spent in Europe had been "all devoted to the study of rheumatism." You pay your money and take your choice.

Going back again to the circular letter from Paul Case: You are told that during the World War, while serving at one of the base hospitals in France, he was given a few days' leave and went to Aix les Bains. When he


PAUL CASE - SON
Two years in Europe Toured England, Denmark Belgium, Holland, Sweden, Austria, Germany, France, Spain, Portugal, Italy and Canada, all devoted to the study of RHEUMATISM
Rheumatism
Its Cause. Its Cure.
JESSE A. CASE
F. S. Sc. (London)
I am the man that conquers Rheumatism. Fifteen years devoted to this one subject.

When Jesse A. Case was exploiting his fraudulent mail-order cure for rheumatism, he used, as part of the advertising, a booklet containing the usual amount of misinformation and falsehood. The front and back covers of the booklet are reproduced above in miniature (in the original the booklet was about 5 inches by 8 inches). Note how Jesse A. Case brought Paul Case into his business.


RHEUMATISM
I have returned home after 2 years' service in France with the A. E .F.
While in France I obtained from a noted French physician a prescription for the treatment of Rheumatism and Neuritis. I have given it to thousands with wonderful results. The prescription costs me nothing. I ask nothing for it. I will mail it if you will send me your address. A postal will bring it. Write today.
PAUL CASE, Box 452, D-129, Brockton, Mass.

Here is a typical advertisement of the mail-order "rheumatism cure" now being exploited by Paul Case. Case offers to send free a prescription for rheumatism. The prescription is virtually unfillable, as one of the ingredients is not carried by drug stores.

reached that well-known health resort he found, so the circular runs, "thousands upon thousands with one disease, Rheumatism; train loads coming for treatment and train loads leaving for the battle front and trenches."

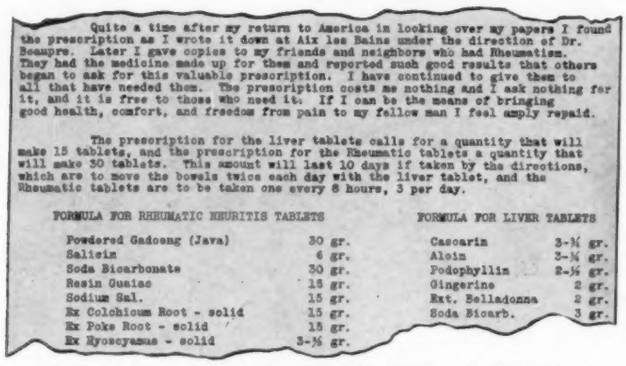
These marvelous wholesale cures were being made by an old French physician at Aix les Bains, one "Dr. Beaupre," who was death on "rheumatiz." The old chap seems to have done the trick with two pills which he gave to all the rheumatic patients. One was a "liver" pill and the other was a "rheumatic neuritis" pill. Case says that he asked Dr. Beaupre for the prescriptions for these pills and obtained them.

On his return to the United States, continues this interesting story, Paul Case began distributing copies of Dr. Beaupre's prescriptions to his rheumatic friends and neighbors who reported such good results that others began to ask for the prescriptions. Hence Case's decision to give the widest sort of publicity to these marvelous remedies for, as he magnanimously puts it, "If I can be the means of bringing good health, comfort and freedom from pain to my fellow man, I feel amply repaid."

Free Prescriptions Given

Then follow the "free" prescriptions. By a coincidence that is almost uncanny the marvelous treatment for rheumatism used by "Dr. Beaupre" is strikingly similar to the preparations used in the fraudulent business of the father of Paul Case.

The prescription for the "Rheumatic Neuritis Tablets" which is now being so generously broadcasted by Paul calls, among other ingredients, for colchicum root and sodium salicylate. These happen to be the main ingredients of the old "Rheumatic and Gout Pills" of Jesse A. Case! The "Liver Tablets" prescription, also given away by Paul, calls for cascara, aloin, podophyllin and baking soda which, strangely enough, were also ingredients



Quite a time after my return to America in looking over my papers I found the prescription as I wrote it down at Aix les Bains under the direction of Dr. Beaupre. Later I gave copies to my friends and neighbors who had Rheumatism. They had the medicine made up for them and reported such good results that others began to ask for this valuable prescription. I have continued to give them to all that have needed them. The prescription costs me nothing and I ask nothing for it, and it is free to those who need it. If I can be the means of bringing good health, comfort, and freedom from pain to my fellow man I feel amply repaid.

The prescription for the liver tablets calls for a quantity that will make 15 tablets, and the prescription for the Rheumatic tablets a quantity that will make 30 tablets. This amount will last 10 days if taken by the directions, which are to move the bowels twice each day with the liver tablet, and the Rheumatic tablets are to be taken one every 8 hours, 3 per day.

FORMULA FOR RHEUMATIC NEURITIS TABLETS		FORMULA FOR LIVER TABLETS	
Powdered Gadoeng (Java)	30 gr.	Cascarin	3-½ gr.
Salicin	6 gr.	Aloin	3-½ gr.
Soda Bicarbonate	30 gr.	Podophyllin	2-½ gr.
Resin Guaiac	15 gr.	Gingerine	2 gr.
Sodium Sal.	15 gr.	Ext. Belladonna	2 gr.
Rx Colchicum Root - solid	15 gr.	Soda Bicarb.	3 gr.
Rx Poke Root - solid	15 gr.		
Rx Hyoscyamus - solid	3-½ gr.		

Here is a reduced reproduction of the "free prescription" for rheumatism sent out by Paul Case. You cannot get it filled, but Case offers to send you the compounded pills if you will send him the money.

of the old "Bilious and Liver Tablets" of Jesse A. Case.

To be fair, though, it must be admitted that the Beaupre-Case prescription does call for a drug that was not in the nostrum exploited by Case's father. This drug is "Powdered Gadoeng (Java)," the first ingredient listed in the prescription for the Rheumatism Neuritis Tablet. Case Junior emphasizes that "best results are obtained from Genuine Gadoeng which is imported from Java."

Here is the fly in the ointment. There is probably not one druggist in 10,000 who has ever heard of "Powdered Gadoeng (Java)" and it is doubtful if there is a retail drug store in the entire United States which carries this drug in stock. Moreover, even if Gadoeng were obtainable, it has no value in the treatment of rheumatism, or for that matter, the treatment of any other condition.

How, then, can the sufferer from rheumatism and neuritis get the benefit of Dr. Beaupre's marvelous prescription so liberally distributed by Paul Case?

Again Paul, the generous, comes to the rescue. The same letter that gives you this virtually unfillable prescription also states that Mr. Case has "made arrangements with a reliable druggist to keep the tablets on hand." The day he receives $1.50 from you he will send you treatment enough to last ten days or enough for thirty days for $4.00.

The "free prescription" game has long been worked by mail-order quacks. There are always hopeful sufferers who are so hypnotized by the printed word that they believe men will spend money on advertising and postage with no other idea in mind than that of helping suffering humanity. Some of the free prescription fakes have as the "joker" a drug that never existed.

Such was the scheme of a faker who adveritsed under the fictitious name "Rev. Edward A. Wilson" and offered to send a free prescription to sufferers from consumption. The mystery element in the Rev. Wilson's prescription was "Extract Blodgetti," a product that never was.

Should you not send Paul Case $1.50 for the compound prescription of Dr. Beaupre, you receive another form letter in about two weeks urging you to order the tablets. In this Case, by innuendo, declares retail druggists incapable of filling the prescription properly. With the letter there comes also a sheaf of the inevitable testimonials and a little slip for you to return to Case with the names and addresses of additional sufferers from rheumatism. Thus is the "sucker list" built up.

Whether there is, or ever was, any "Dr. Beaupre" in Aix les Bains or, if there is or was, whether he ever had such a prescription as that offered by Paul Case is a question that cannot be answered at this time. An intimate knowledge of mail-order quackery in general and of the fraud perpetrated by Case Senior, in particular, makes it less of a strain on one's imagination to believe that Paul Case has merely modified the "come-on" game of his father. If he is technically perpetrating a fraud the matter may safely be left to the postal authorities.

Ready-made Prescription Fallacy

In closing, one cannot do better than quote the words of Judge Lamar, who, in his memorandum to the postmaster-general in 1919, recommended the issuance of a fraud order against the father of Paul Case, Jesse A. Case. Here is what Judge Lamar said about the fallacy of recommending a set treatment for so general a condition as that usually described as "rheumatism":

> It will thus be seen that practically the whole realm of local inflammatory conditions is covered by the claims of this mail-order vender for his remedy.
>
> It has long since been established as a fact that there are many kinds of affections of this character, each of which may arise from a different cause, and that in order to cure any kind of rheumatism or like ailments, it is necessary first to ascertain its character, and then to prescribe the treatment particularly called for.
>
> Case proposes with this remedy to remove any and every cause from which the particular condition being treated may arise.
>
> This cannot be done with any one treatment because it is a fact fully demonstrated and authoritatively established that a remedy which will relieve and cure a disease arising from one cause will, as a rule, in no wise help or cure a disease produced by another and different cause.

PRIZE CONTEST

for High School Pupils

for

POSTERS ON HEALTH SUBJECTS

HYGEIA offers to high school pupils a series of prizes for the best posters on health subjects.

PURPOSE

The purposes of this contest are: first, to stimulate an interest in health and its attainment among pupils in the schools; and second, to secure posters which may be used in extending the propaganda for health. All posters submitted become the property of the American Medical Association and HYGEIA.

JURY OF AWARD

The following persons have kindly consented to serve as the jury of award:

Dr. Hugh S. Cumming,
Surgeon General of the U. S. Public Health Service.

Mr. John T. McCutcheon,
Cartoon artist of the Chicago Daily Tribune.

President William B. Owen,
Chicago Normal College, Ex-President of the National Education Association.

PRIZES

The first prize will be $100, second $60, third $40, fourth $30, fifth $25, sixth $20, and seventh $15.

The six posters ranking next in merit will be given an award of $10 each. The ten next in rank will be given an award of $5 each. Twenty-five accepted posters will be recognized by prizes of $1.00 each. Fifty will be given honorable mention.

There will also be awarded a prize of $75 to the high school, the pupils of which submit the best group of posters (number and quality both to be considered).

CONDITIONS OF THE CONTEST

1. The SUBJECT of the poster may be any topic having to do with health.
2. The SIZE of the poster must be either 22 by 28 inches, or 14 by 18 inches. It may be made on suitable paper, cardboard, or canvas, and may be done with crayons, pencil, ink, water color, or any other medium suitable for the purpose.
3. The NAME and ADDRESS of the person drawing each poster, together with his age, the school which he attends, and the name of the teacher under whose supervision the poster was made, must be written plainly on a separate sheet of paper, placed in an envelope, to be sealed and attached firmly to the poster by clip or pin. (As the posters are received each will be numbered, the sealed envelope being given the same number. Thus the names of the contestants will not be revealed until the committee has decided upon the merit of every poster submitted).
4. The contest will close at midnight, MAY 31, 1924. No posters received after that date can be considered.
5. Posters may be sent by registered mail, parcel post, or by express. They must not be folded or creased, but mailed flat, between stiff boards, or carefully rolled in a stout mailing case.
6. All posters to be addressed:

   Poster Editor,
   HYGEIA,
   535 North Dearborn Street,
   Chicago, Illinois.

A helpful article on "How to Plan a Poster" by Mr. John T. Lemos, of Leland Stanford University, Assistant Editor of the School Arts Magazine, appears in this number of HYGEIA.

Any further information can be secured by writing to the Poster Editor of HYGEIA.

How to Plan a Poster

JOHN T. LEMOS

BOYS and girls everywhere are busily engaged in learning how to make art function in their daily life. The Bureau of Health and Public Instruction of the American Medical Association, realizing the great value of installing the ideals of healthful living in the minds of our growing children, has hit on poster competitions as an effective means of doing this work, and has just announced a contest *open to high school pupils.*

When teaching children to make posters, many teachers will be confronted with the task of planning this problem so as to produce the best of results. The big question with them will be How shall we go at it?

For Little Folks

For very little children, only the most simple ideas should ever be attempted in poster making. There are two ways by which this may be done effectively. The first way would be to select single words, such as "Sleep," "Eat Right," "Exercise," and allow the children to illustrate them in cut paper. To cut the letters and design in colored paper against a black or gray background is always a good method.

The second way would be to allow the children to cut pictures from magazines to illustrate their ideas. The lettering can then be added in cut paper. While in a few cases there may be some objection to this last method, it must be realized that the smaller artists often have splendid ideas, but are seriously handicapped by a lack of technical training. This method allows them a broader range and frequently results in posters of great attractiveness.

Children farther along in the grades are able to execute posters having more words and more mature ideas. For instance, they could make posters having such wording as, "Breathe Fresh Air," and "Sleep Eight Hours."

Occasionally teachers may find a child who will be able to produce a poster in crayons that will be effective, but by far the surest and most artistic results will be obtained by using cut

paper. Sometimes smaller lines may be added in ink or crayons. Cut paper helps keep the poster areas flat and simple, which is a very desirable feature in poster work. Crayons, pencil, or similar mediums tend to result in weak, sketchy looking posters.

High School Students

Students well along in art work, as those in high school, should be given their choice of cut paper, opaque watercolors, transparent watercolor, or ink work. Those who are wise will use cut paper if they are not sure of their values, as it makes this part easier for them.

In opaque watercolor the large areas should all be put in first and allowed to dry well before putting the smaller spots over them. Working the brush in a criss-cross manner onto the paper will result in smoother areas. Students should be encouraged to stand some distance away occasionally and view their work. This will soon show which lines are too delicate and fussy, and which have "carrying quality."

The use of black, gray, or brown paper as a background for opaque watercolor always results in a more "unified" poster.

In all cases simplicity and originality should be encouraged. By simplicity is meant an elimination of all things that are unnecessary to the one main "big idea." Children often think that the more things they can crowd in, the better the poster will be. A good way to encourage simplicity is to tell them to think of their idea. Then see in how simple and broad a way they can show this idea. As one artist put it, "Tell them to leave out half."

Originality means the viewing of a message from a fresh, unique viewpoint. Children are generally very good at this, as their minds are not yet cluttered up with ideas that have been viewed or read many times over. However, if the idea *is* unique, it should be planned so as to have the right reaction.

Posters with a little touch of humor in them are generally successful ones, as one shown recently of a fat man hurrying for a train. Underneath it were the words "Take Exercise."

How to Proceed

Below are a few "Do's and Don't's" that may help high school boys and girls in the competition.

1. Plan out your idea. Make a little sketch or cut-out of it first to see how it looks.
2. Decide on your colors. Don't use too many.
3. Arrange for your wording. Be sure that it fits in as a *part of your poster.* Don't have words that turn circles or run up and down like Chinese writing.
4. Keep all your areas flat and simple. Put the softest colors in the largest areas and the brightest ones in the small spots. Any part you wish to call attention to may be in bright colors.
5. Don't have too much wording or too many small spots in your design.
6. Try to keep all the parts of your poster so that they lead the observer's eye from one part to another.
7. Last. Make believe you are some passerby who is looking at your poster for the first time. Does it attract your attention? Do you stop to read it? Does it make you want to do the things that the poster tells you about?

If it does, then you can be sure that it is a good poster.

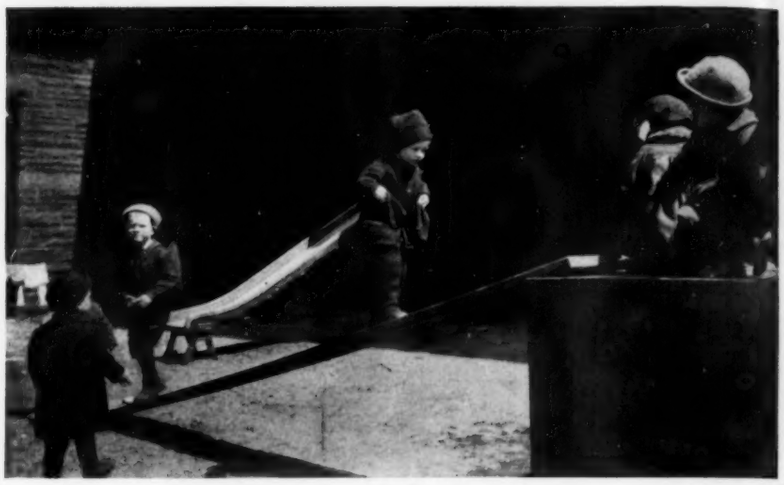
Here are some health posters which are simple and attractive.

It is such posters as these—only better, if possible—that HYGEIA is seeking in its prize contest.

Read about the health poster contest for high school students on page 161.

Overcoming Contrariness and Fears in Children

MRS. HELEN T. WOOLEY



Learning to climb and balance

WE used to think that the early part of a child's life was of little consequence, but the psychologists are rapidly convincing us that the years under five are the most important. Personality, we are now taught, is deeply and permanently modified by the events of the first five years. Indeed, John Watson goes so far as to believe that the main elements of personality are laid down by the end of the second year. Anyone who has dealt with kindergarten children realizes how well defined personality is by the age of five and how definite are the problems of behavior that confront the kindergarten teacher.

To Study Child Training

For about a year, the Merrill-Palmer School, Detroit, Michigan, has had a nursery school for children under five. The children come at about nine o'clock and stay until four. This nursery school furnishes a laboratory for training young women in child care and at the same time affords an opportunity for studying the children themselves. From my observation of these children and their parents, from dealing with my own children, and from observing those of my friends, I am convinced that most parents are making errors—more or less common errors—in the training and management of young children. This is doubtless because so little instruction has been given young people with regard to the training of small children.

John Dewey recently made the remark that this business of being a parent was the most unstandardized thing left in modern life. Very little organized experience from the past is available for the young parent of today. He is compelled to start afresh in his attempts to train his young children, almost as though no one had done it before.

After studying the specific ways in which parents and teachers fail in the management of their children, I have come to the conclusion that two fundamental lacks are the root of the trouble—lack of understanding of the child and lack of sympathy with his point of view. Doubtless these two failings are closely related, and perhaps they both arise from selfishness. Many adults, without realizing it, are very selfish in their attitude toward children. What they really consider is the importance of the child to them—whether the child is contributing to their happiness and satisfaction. The important point should be, not what the child means in the life of any adult, but what he means to himself and to society. The parent whose chief concern is whether or not the child is affording him satisfaction, rather than whether or not the child is making the most of his own physical, mental and moral capacities, has no chance whatever of being a wise and understanding parent.

Playing house in a packing box

Contrariness Is Natural

Contrariness is a thing to expect in children of three and four years. It is at that age a natural stage of development. Children of three and four are just realizing that they have personalities, and are trying out their powers and their limitations. They like to see if and how

Watching some angleworms

far they can assert their own wills and get the better of the adults about them. Many of them become negatively suggestible at this age. My own little daughter, after refusing to eat rice, for instance, would at once insist on having it if I said, "Isn't it too bad? I'm afraid there isn't enough rice for Charlotte."

I am not recommending this method of getting results, I am merely confessing my own sins in illustration of the extent to which contrariness may go at the age of three, in the case of a child who proved to be far from contrary at a later stage. The danger is that unwise treatment may exaggerate the contrariness and fix the habit to such an extent that the poor victim will be for life one of those whose first instinct is to say no and to oppose if possible.

In our nursery school we have many cases, both of normal contrariness and of the exaggerated types, which are danger signals. I can best describe the origin and treatment of the kind of contrariness which is detrimental to mental health by telling you of individual cases.

Adults Spoil Child

The most consistently contrary child we ever had was a three-year-old whose parents were well along in years when she was born, and whose grandparents lived with the family. There were four elderly adults whose chief concern in life was bringing up this child. When she first arrived at the school we soon found that she inevitably said no to every suggestion, and that if we tried to insist on any type of conformity to demands, she threw herself on the floor, kicking and screaming in a real tantrum.

It was quite clear to us what happened at home under these circumstances. Mother, father and grandparents gathered around, offered rewards and threatened punishments, coaxed, cajoled and commanded, showed every sign of concern at such behavior, and ended by giving the child some sort of compromise which gained at least part of what she had demanded. Meanwhile, she had had the satisfaction of monopolizing the center of the family stage for some time.

When she had tantrums at school, none of these satisfactory results followed. Miss Henton, the head of the school, merely said to her, "Eva, if you wish to behave this way, it must be in a room by yourself. You are disturbing everyone here with your noise." The child was removed bodily to a quiet room and left alone until the fit was over. No one threatened, no one bribed, no one coaxed, no one compromised; she was simply removed because her behavior was too annoying to others. As soon as she was quiet again, she was allowed to come back as though nothing had happened.

A few applications of this treatment were sufficient to do away with tantrums at school, though of course the child continued to have them at home. When we found that she refused every suggestion, we simply stopped making any. She was allowed to come into the nursery schoolroom and do as she pleased, so long as she did not annoy others. In a few days she found there was no great satisfaction in staying out of the games when no one asked her to come in, or in refraining from playing with the toys or entering into occupations, when no one suggested that she should. She began gradually to select something to do for herself, and to join in some of the games. She was welcomed without comment, just as any other child would be.

Gradually, the expression of her face changed. It became less cross, and less self conscious. She sometimes forgot herself and was happy. However, her excessive contrariness was apt to crop out in most unexpected ways. An example of such behavior occurred one day

Washing the cups

when I went into the nursery and found the child looking quite happy and unconscious of herself. She was just starting upstairs with a group of children to whom a story was to be read. I smiled at her and said, "Oh, Eva is going to hear the story too; isn't that nice?" She stood still immediately and the entire expression of her face changed to one of anger and resentment. She said nothing, but in a moment turned around, went down the few stairs she had mounted and back to the nursery school room. Miss Henton, who knew she was to be sent upstairs, and who had some special reason at that moment for not wishing to have her in the nursery, turned her about and sent her back upstairs again. She went part way and then sat down on the steps and began to cry. No one paid any attention to this and after a few moments she decided to go on upstairs and hear the story. The significant thing about this incident is that even approval was apt to call out the contrary reaction.

The source of trouble was unquestionably the inability of the parents to see the child from her own point of view. Not only the parents, but the grandparents enjoyed continually fussing with the youngster. Her whole régime was one of adult correction and interference. Indeed, the mother rather prided herself on the fact that she could do nothing else but take care of the child, and frequently needed the help of other members of the family.

Every move from morning to night was made the topic of discussion and left open for possible disagreement. In this instance, we were not able to make the mother see to what extent she was responsible for her child's undesirable types of reaction. From her improvement in school, however, we have little doubt that if the home management could have been influenced to conform to that of the school, the greater part of her contrariness could have been conquered, in spite of the fact that the habit was so firmly established.

Children Have Many Accidents

Little Mary, three years old, came from a very superior home. Her mother was a college graduate and her father a professional man. Both parents were devoted to the child. In this instance, the mistake had been in making demands on the child which were more than she could meet. The mother had a beautiful home and was very much interested in having it maintained in perfect order. It was a home in which a scratch on the furniture or a broken dish would be a real tragedy. Accordingly, the mother had undertaken to train her three year old child to be as careful of possessions as she herself.

What the mother failed to realize is that this is a totally unreasonable demand in the case of a young child. Their motor control is not sufficiently well developed at this age to avoid accidents. Young children should be placed in an environment where they can be at ease and where it is not necessary to caution them constantly about not breaking or marring things. Children do not intentionally mar the furniture or break dishes unless they have been so mismanaged that they do it out of revenge. At the start, such instances are purely accidents and the young child, like anyone else, feels that he should be excused for a thing which he in no sense intended.

School Furnishings Simple

All of the furnishings at the school are of such nature that the children can handle them in their own way without being constantly warned against injury. They do all of the setting of the tables and carrying the food back and forth. Even two-year-old children carry their own trays.

Of course, accidents occasionally happen, but when they do, no one scolds or remonstrates. The child who has the accident is more sorry than any one else. It is understood that the one who has done the spilling shall get the pail and cloth and clean up the mess. If need be, he is helped by some student.

The little girl of whom I speak, soon after she came into the school, spilled her plate of dinner from the tray and broke the plate. She stood looking at the wreck, as if petrified with fear. Miss Henton happened to look up and see the expression on the child's face. She at once said, "That is all right, Mary, we will help you clean it up."

The child, without making any move, turned to Miss Henton and said intently, "I didn't mean to do it, did I? It was an accident, wasn't it?"

Miss Henton responded, "Of course, you didn't mean to do it, it was just an accident and it is all right." Still the child remained frozen to the same spot; then the whole expression of her face changed. She looked angry and resentful and she suddenly burst forth, "I did mean to do it too, I did it on purpose," and began to weep violently.

From that day on we were unable to induce the child to carry a tray. The suggestion that she do so was met with an intense internal opposition which could not be easily overcome. Not even the fact that carrying trays is exceedingly popular at school and is sought as a privilege, moved her.

For more than a week Mary refused to carry a tray under any circumstances, then a childhood illness kept her out of school for several weeks. On her return, she was still unwilling to carry trays, but gradually overcame her reluctance when no one tried to insist on her doing it. Doubtless, the fact that every one

else regarded carrying trays as a delightful privilege influenced her. Then, too, she had a chance to see that accidents were never treated as crimes.

Analysis of what apparently happened in this child's mind shows how complex reactions may

Sitting on the davenport they had made

be even at the age of three. She was all prepared for blame and remonstrance when she spilled the tray. When it didn't come, and she was met with sympathy and understanding instead, she did not know how to deal with the situation. After a pause she reacted in the habitual way of turning contrary and taking the other side of the issue, even though it meant accusing herself of a fault she had not committed.

Contrary Reactions May Become Fixed

These two cases seem to illustrate the way in which contrary reactions become fixed in small children. The first is that of constant interference and argument over everything that has to be done and continual attempts to direct the child in minute detail. Actual demands should be reduced to necessary and essential matters about which no reasonable protest can be made. If the demands are excessive and are applied to all the small details of life, then the child, in self defense, rebels and finds out that he can refuse to do very much of what is asked of him. He is apt to become interested in refusal and to make a game of the row that results. The upshot is that he is in the attitude of looking for a chance to refuse.

The other type of error is that of demanding conformity to behavior which is beyond the present possibilities of the child. If adults try to insist on things of which the child is, at the time, incapable, his only mode of defense is to refuse and become ill tempered about it. It is perfectly possible to insist on reasonable things in such a way that it will not occur to the child to refuse. On the other hand, it is possible to create such an atmosphere that any request made by the mother is certain to be refused.

Only Three Instincts Present at Birth

If John Watson is right in his analysis of fundamental instincts, doubtless contrariness is a development of primitive anger. Watson finds but three instincts present at birth—anger, fear and love. The stimulus, which at the start calls out anger, is restriction of motion. The baby whose arms and legs are held becomes angry, and struggles and cries about it. Out of this resentment at interferences with activity, doubtless arises the more complex type of resentment at unnecessary interference with activity, which we see in these older children.

If parents could learn the simple lesson of providing suitable occupations for young children and then letting them alone as long as they are happy and busily occupied, never interfering unless it is necessary to do so, most excessive contrariness could be avoided.

Fear Is Fundamental

It is impossible to avoid all fear with young children. Fear is a fundamental and necessary instinct. At birth, as Watson assures us, the only stimuli which call it forth are the falling sensation, due to loss of support, and very loud sounds. Later, of course, the experience of pain calls forth fear, as it biologically must. These

The grocery store—supplies are arriving by wagon. Both store and wagon were made by four year olds.

primitive stimuli later become transferred by the complex processes of experience to all sorts of objects and ideas which were not originally tinged with fear at all. It is the part of the parent and teacher to be constantly on guard to see that no unnecessary fears arise. The only

fears which are legitimate in small children are fears arising from the inevitable consequences of what they do.

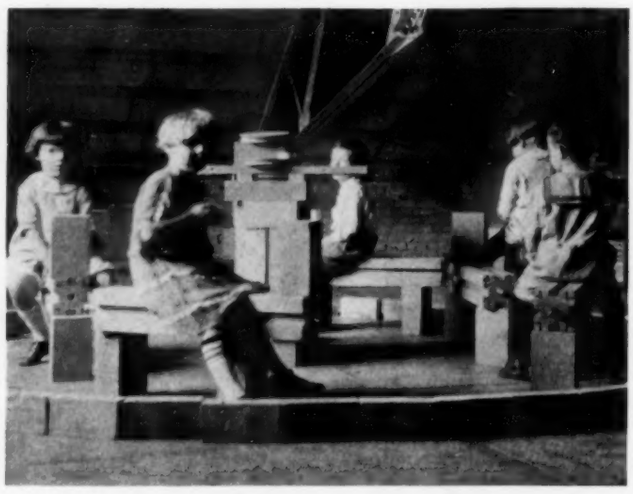
One or two illustrations drawn from the children in our nursery school will illustrate the undesirable types of reaction which are so easily set up by fear. The first is the case of a boy of three who was a particularly sweet and happy child. Little John is superior both mentally and physically and is cheerful, happy, helpful and cooperative in his relation both to the adults about him and to the other children.

One day he suddenly and without apparent cause objected to taking his nap as usual; although he was persuaded to lie down, he was very uneasy and restless and did not sleep. He either could not, or would not tell what was really the matter, but his objection to his nap and his restlessness and sleeplessness kept up for several days. He began to seem upset and nervous and quite unlike himself.

His mother reported that at home, for the first time, he had begun to display some opposition toward going to school and had seemed to her to be disturbed. When his mother was told of his behavior about the nap and asked if she had any suggestion which might explain it, she said that it might be connected with one or two fears to which the child was subject. She reported that he was afraid of spiders and cobwebs and asked whether his present behavior could be in any way related to spiders or cobwebs.

Miss Henton at once went upstairs to the sleeping room and discovered in the corner above John's bed a cobweb and on the wall near it a spot which might have been a spider, though it was not. The cobweb was at once removed, and we also took precaution to change the position of the child's bed in the room. When he next came up for his nap and was told that his bed had been put in a different part of the room, he seemed very much pleased, went over to his cot and at once went to sleep in his usual peaceful way.

From that time on there was no more difficulty either at home or at school and his nervousness and irritability disappeared. Although this was undoubtedly the thing to do at the moment, it did not, of course, serve to rid John of the fear. In order to do that, it would be necessary to interest him in spiders and cobwebs and give him the kind of contact with them which would tend to do away with this dread.



Taking a ride on the merry-go-round of their own construction

The mother reported that she herself was afraid of spiders and that one day when John was younger they went down into a basement where some spiders were running about on the floor. The mother screamed and ran and the child was, of course, frightened too. In most instances of intense and lasting fears in children, I have found that the mother herself has been subject to some similar fears. Mothers often fail to realize how vividly children are impressed by an expression of fear on their part. Frequently, of course, it is not the mother but a nurse or servant who starts the trouble. What few adults realize is how permanent a handicap unreasoned reactions of this type may be to a child. Cobwebs are a very frequent phenomenon in the world and the child who cannot meet one without a nervous upset is certain to be handicapped.

Association of Ideas Brings Fear

A second case of fear in the nursery school is of a much more subtle type and very much harder to trace. This is another instance of a child who was very superior, both mentally and physically, whose parents were educated professional people and whose home atmosphere was unusually good. One day this child stood at the top of the stairs leading from the children's sleeping room to the nursery school room —stairs which she had gone up and down every day for weeks before—and began to tremble and cry, saying she was afraid to go down.

The child, herself, could not explain her fear except that she was afraid to pass a certain post in the railing. She said if someone would walk next to the railing between her and the post and take her hand she thought she could go down. No attempts to get any further explanation from the youngster were successful. Of course, her request was heeded. Miss Henton walked between her and the railing and we thought by the next day the affair would be forgotten. Much to our surprise, the following day the same thing occurred again. It was evident that the fear was not assumed for the sake of attracting attention. The child trembled and perspired and showed every sign of intense fear. She kept saying in great distress, "I can come up all right but I can't go down." We were totally unable,

for some time, to find any explanation of the phenomenon.

Our only theory was that something had happened to frighten the child just as she started down the stairs, but it seemed that so intelligent a youngster would be able to report it. She was three years and ten months old at the time, and very capable of giving an account of her experiences. Day after day we worked with the child to get her past this totally unreasonable fear. We explained to her that the railing was there for her benefit to keep her from falling down the stairs. Every day someone obligingly walked next to the railing, talking to her about it all the time. Slowly the effect wore off until after a few weeks she was able to come down without a guard.

One day in the later part of this period the child came up to me as I was sitting in the nursery school and began to talk about her baby brother who had been born a few weeks before. She said, "When my mother went to the hospital she didn't have that baby and when she came back she had him." She repeated the remark several times with a very intent, strained expression in her face. It was evident that she had been thinking about the problem of the advent of the baby and had been worrying about it. Suddenly the mechanism of the development of "phobias" in adults came to my mind and I began to wonder whether the phobia of this child could be related to some sort of suppressed fears connected with sex.

The lion and the tiger looking through the bars of their cages at the zoo. The cages were made by these four year olds.

The mother had already been consulted and was just as incapable as we were of explaining her fear of the stairs. When I got this new clue, I sent for the mother and questioned her about the baby's birth. She reported that it had been born in a hospital, and that the child had been brought there every morning on her way to school by her father.

When I asked the mother whether the child had walked up or down the stairs at the hospital, she replied that Ellen had never walked upstairs—she always came up in the elevator, but frequently she and her father walked down stairs if the elevator did not happen to be at hand. When I asked her what kind of a staircase it was she described one very similar to ours, with a short flight of steps at the top leading to a landing place and a railing with upright posts at the side.

I then asked the mother whether they had told the child about the arrival of a little brother and helped her to understand it. She said they had discussed the matter but had thought the child too young and it had not been mentioned to her. Since the baby's birth she had not asked a single question about it; this, her parents thought, was strange and had commented on it. She was usually full of questions about all sorts of things and it seemed very noteworthy that she had refrained from asking a single question about the most startling event of the family life.

This series of circumstances seems to me quite sufficient to account for the phenomenon we had seen. When the child came out of the mother's room at the hospital with her mind filled with anxiety about her mother's illness and the meaning of the arrival of the new baby, the first thing on which her eye fell was the staircase. For weeks she asked no questions about her worries, but they were there in the background of her mind, and sometimes very much to the fore. Suddenly, the similarity of the staircase to the one so immediately connected with her problem aroused the state of intense fear which we observed. The child, of course, was as unable to explain it as we were.

As soon as the mother understood the difficulty she promised to talk with the child about the arrival of her little baby brother and try to change her attitude toward the situation, a procedure which should, we thought, preclude any later bad effects from the experience. The case seems to illustrate the type of fear in childhood which may, according to psychiatrists, bring about definitely pathologic results later in life, after the original event has been forgotten.

Pyorrhea

How Better Health May Be Gained by Caring for the Teeth and Gums

ARTHUR D. BLACK

THE disease of the gums commonly called "pyorrhea" is responsible for the loss of untold thousands of teeth each year. A majority of people over thirty years of age have one or more teeth affected by this disease, and more than 75 per cent. of persons beyond fifty have lost from a few to all of their teeth because of it.

The term "pyorrhea alveolaris" was probably first used by the French about 1870. The word "pyorrhea" means a flow or discharge of pus, the word "alveolaris" refers to the socket or hole in the jaw bone which holds the root of the tooth. The term "pyorrhea alveolaris" therefore means a discharge of pus from the tooth socket, along the side of the root.

This, however, is really only one of the symptoms of the diseased condition—a result of an infection which destroys the tissue by which the root is attached to the bone, forming a pocket along the side of the root of the tooth.

A most serious feature of this disease is its extreme chronicity. Where a pocket is once formed, it is a permanent injury. There is no prospect of a reattachment of the gum tissue to the root.

Bad Health Often Traced to Teeth

This disease of the gums bears a dual relationship to the general health. It is a chronic infective process which may cause serious systemic disease as a result of the passage of infection into the blood and its transmission to other parts of the body.

Infections of the gall bladder, joints and muscles are doubtless often caused by pyorrhea. Pyorrhea often brings about impairment of health as a result of the loss of teeth with corresponding loss of ability to masticate food, resulting in faulty digestion.

In view of these relationships, and also in view of the large percentage of adults whose teeth are more or less affected, it is important that the public should have a better understanding of the causes of pyorrhea and its prevention.

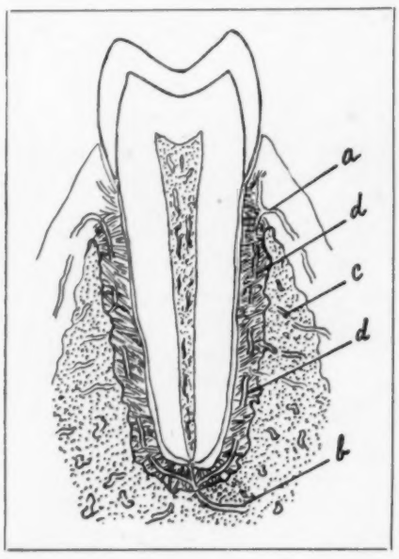
This disease always begins with an inflammation of the gums, destroys first that portion of the soft tissue attached to the root nearest to the crown of the tooth, and gradually progresses by destroying more and more of the attachment toward the end of the root.

It is important that this should be clearly understood by both dentist and layman, because it is the key to both prevention and treatment. If the gums are watched closely and all slight inflammations are treated promptly, pyorrhea should in most cases be prevented.

The edges of the gums which immediately surround the teeth are peculiarly constructed to withstand injury from the chewing of hard foods which are pressed down against the gums by the teeth.

In Chewing 175 lbs. Pressure Exerted

Many foods require a force of from fifty to a hundred pounds or more to crush them between the teeth. The average young adult is able to exert about 175 pounds in chewing with the



These four extracted teeth show deposits of tartar from the saliva. Such deposits destroy the gum tissue, as more and more tartar accumulates. Eventually the teeth become so loose that they must be removed.

To the left is a cross section of a tooth, with surrounding gum and portion of the jaw bone; a, indicates the gum; b, blood vessel supplying the tooth and adjacent tissue; c, bone of the jaw; d, the fibrous tissue by which the tooth is attached to the bone. In pyorrhea these fibers are destroyed, thus forming a pocket from the edge of the gum to the end of the root.

molar teeth, and much of the force used is transmitted to the gums; therefore, the gums are tough, like the skin of the palm of the hand. The saliva, which is slippery, helps to protect the gums by acting as a lubricant between the gums and the food.

In addition, the gums are well supplied with a quick repair process; minute blood vessels run all through the gums, almost to the very surface, bringing materials to effect prompt healing when an injury occurs.

Three teeth which show the effect of pyorrhea. The deposit on the middle tooth has almost reached to the end of one root. This tooth had doubtless become loose, as very little of the attachment to the bone is left.

These provisions of nature are the most important preventives of pyorrhea. Many slight injuries are healed so promptly that no harm results. Those same provisions also make the gum tissues very resistant to infection. The tissue is so dense that bacteria can not easily penetrate it and when they do, the abundant blood supply helps with the multiplication of cells to destroy the invaders.

One may conclude, therefore, that the normal health—or the normal resistance—of the gum margins must be seriously impaired in order that infection may enter and destroy the deeper tissues which attach the tooth root to the bone.

Two Ways that Gums Are Injured

This impairment of the normal health of the gums appears to occur in two ways: first, from continuous or often repeated local irritation of the gum margin, as by the edge of a crown or filling which does not conform to the smooth contour of the surface of the tooth, from the pressure of food particles which catch between the teeth, from injuries to the gums by the misuse of toothpicks, from the accumulation of deposits of tartar on the teeth, or from lack of cleanliness, etc.; second, as a result of systemic disease which lowers the general resistance of the individual or which may have a peculiar selective effect on the gums. For example it is known that large doses of calomel will cause inflammation of the gums. Calomel is a mild mercurial poison. It seems likely that several chronic diseases may throw poisons into the circulation which similarly affect the gums.

Of all local causes of inflammation of the gums, two stand out most prominently: lack of thorough cleanliness and the packing of food between the teeth. The latter is due to a lack of proper contact of the teeth.

Teeth Touch Like Marbles

Normally, the contact between two teeth may be compared to that of two highly polished marbles held against each other. They touch only at a point; it is not a contact of broad surfaces. If a waxed floss is passed between the teeth, some force should be required to draw it past the point of contact, and it should go through with a snap. Two things may be wrong with a contact: the surfaces may be too flat or too rough so that the floss will drag or be frayed; or there may be what is called a weak contact or no contact, because the teeth have moved apart the least bit.

The result in either case is injury to the gum tissue between the teeth. If there is a flat or rough contact, food will frequently be caught and held between the teeth; if there is a weak or open contact, food will be wedged between the teeth and pressed down against the gum at each meal. The prompt removal of the food is necessary to prevent injury, although in many cases the toothpick or even the silk floss employed for the removal of the food will cause as much injury as the food itself, unless the greatest care is used.

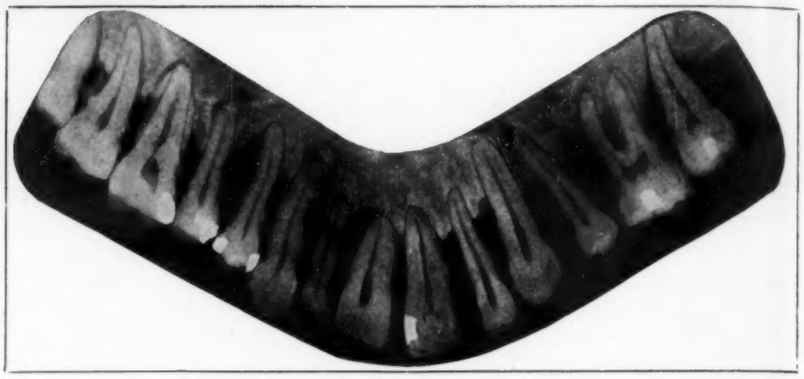
Gum margins are not very sensitive to slight injuries, so that extensive destruction of this tissue may occur very gradually without pain. Some persons will be annoyed, but often there is no complaint of pain.

In most cases faulty contacts may be corrected by the dentist. Rough surfaces may be made smooth, and flat surfaces more convex. Weak or open contacts may be made tight by filling operations.

Sometimes the chewing surfaces of the teeth will wear unevenly, so that a cusp of one jaw will press between two teeth of the opposite

If a person brushes the teeth properly twice a day, the accumulation of tartar can be prevented. In this picture much of the bone about the lower front teeth was destroyed by neglect of deposits of tartar.

How pyorrhea destroyed the bone about the teeth in one case. All the teeth are loose. In the figure at the left, the teeth have moved and protruded as a result of the loss of attachment to the bone. (Front and side views.)



jaw causing a slight separation. Possibly a little grinding of the too prominent cusp will permit the opposing teeth to resume their normal contact.

Should Have Teeth Examined Regularly

Many dentists are making careful studies of all such conditions and are generally finding simple methods of correcting the conditions which permit or cause inflammations of the gum margins, thus preventing pyorrhea.

It is most important that patients should cooperate with their dentists by presenting themselves at stated intervals for examination and carrying out with the greatest thoroughness the daily care of their mouths to keep the gums in the best of health.

In cases in which pyorrhea has actually become established by the destruction of the attachment from root to bone, forming one or more pockets about the teeth, the gums are likely to be inflamed and bleed when touched with the tooth brush.

Occasionally the affected teeth may be tender to the touch of the opposing teeth, they may seem to be a little "longer" than their neighbors. They may be slightly loose, or very loose. The smaller teeth, having single roots, are more likely to be loose than those having several roots, as the latter will often have but one root involved in the disease and the other roots may hold the tooth firmly in its socket.

As a given tooth becomes affected with pyorrhea, it often moves a little away from its neighbors, permitting food to wedge between. This, of course, aggravates the condition, as the impacted food causes additional irritation.

Three Ways of Treating Pyorrhea

There is much difference of opinion among dentists as to the best methods of treating pyorrhea. Three methods are recommended.

First, in cases in which the pockets are not deep, a careful examination is made to discover deposits of tartar on the teeth within the pockets. These deposits are carefully removed and the surfaces polished. Then the pockets are thoroughly flushed out at frequent intervals with salt water or some mild antiseptic.

Second, in cases in which the pockets are deeper—possibly involving one fourth to one third of the length of the root—the most satisfactory treatment oftentimes is to inject procain into the gums to make the operation painless, and then cut away the portion of the gum that forms the pocket. Since this overlying gum tissue will not be reattached, it is of no service in retaining the tooth, and the tooth is really better off without it.

There are two important advantages in this method of treatment: it eliminates the pocket, which is the best kind of an incubator for the growth of micro-organisms, and it does away with the tissue through which infection might enter the circulation and do damage elsewhere.

Third, the extraction of those teeth which have very deep pockets is recommended. The infection is eliminated almost immediately by the extraction of the teeth affected by pyorrhea, and the gums will be fully healed within a few days. Oftentimes the mistake is made of endeavoring to save these badly infected teeth over too long a period of time. It must be remembered that more and more of the bone of the jaw is being destroyed about such teeth, and occasionally so much bone is destroyed that a person can never wear artificial teeth satisfactorily after his own teeth have finally been lost.

Prevention Is Best Treatment

Finally, it should be impressed on everyone that the most important and successful treatment of pyorrhea is the preventive treatment, which includes the closest watchfulness for and prompt care of slight inflammations of the gum margins by the dentist, coupled with the very best cooperation of the patient in carrying out a specified routine in mouth hygiene.

Nothing but a Cold

JOHN B. HUBER

THE neglected cold, considering its consequences, is the most serious of human ailments. Could its sum total in suffering, in money loss, in inconvenience, in its infection danger, and in the fatalities which are oftentimes, though perhaps remotely, sequel to it be properly appreciated, no one would say the common cold is a trifling thing.

The common cold leads to, predisposes to, many diseases by weakening the body and by destroying the properties protective against germs inherent in the mucous membrane of the nose and throat.

To two of these diseases the common cold leads preeminently—consumption and pneumonia.

Colds Came with Houses and Clothing

Colds seem to be the exclusive privilege of civilization. The human race probably didn't begin to snuffle much until it began to build houses and to wear clothes.

The next step toward the handkerchief era was when houses began to be heated. Then, instead of a glorious, healthy, vigorous battling with the elements, people crowded into their superheated dwellings, and began to know the nature of colds.

Fresh air abounds all over the surface of God's earth, except in the houses which man has built. Not fresh air but the want of it is the cause of many diseases, the initiation of which is colds.

"The stove is a mesmerist that plays no small part in the reduction of human beings to a state of idiocy. The mephitic vapors in the atmosphere of a crowded room contribute in no small degree to bring about a gradual deterioration of intelligences; the brain that gives off the largest quantity of nitrogen axphyxiates the others in the long run."

Was this quoted from an up-to-date book on hygiene? Not at all; the romancer, Balzac, wrote it nearly a hundred years ago, before our modern systems of sanitation were even dreamed of. But what could be sounder in science or in common sense today?

As our forebears who first got the knack of building houses found them comfortable, conducive to ease if not to dignity, they became enervated by constantly rebreathing their own poisonous exhalations, mingled with those of their family, their boarders and such animal friends as they could not bear to see suffer in the raging elements without. Coughing and sneezing, by which particles of germ-laden material were disseminated, helped infection along considerably.

The "Bad Night Air" Fetish

Next in order, in the race's evolution toward the superman came the fetish about night air; so that sleeping rooms were kept hermetically sealed. Bedroom windows are even now, in some places, despite all the fresh air propaganda, nailed down in November, and kept so (when more properly they should have been nailed up until March or even April). And yet, winter and summer, what air has the good Lord given us to breathe at night, if not night air?

Later people came more and more to burden themselves with clothing, in which they would collect germs, thus adding to the assortments already existing in the house. True, most germs cannot live for any length of time outside the living animal "host." And yet one cannot be sure that the germs in one's clothing are always dead ones. Let him who thinks his overcoat is germ-free because it is well brushed, turn a vacuum clearer on it and note the result.

A very great factor in catching colds is the disturbance of the body's equilibrium by passing from the superheated home, where one gets into a perspiration, into the freezing open. Healthy living is the constant and right adjustment of internal relations to external relations. Normal relations are thrown completely out of gear by the procedure just stated.

Nervous Persons Catch Cold Easily

An intimate feature of the common cold is catarrh, an inflammation of the mucous membranes of the nose and throat. Some catarrhs have a nervous relation. People nervously exhausted—neurasthenic—are apt to get a catarrh in the fall and not to be rid of it until winter is well past. Even then their conversation is apt to be in the "Cub, gedle Sprig" manner of speaking. Such folk will have a nervous catarrh simply from the apprehension of catching cold.

Most colds are the result of germ invasion of a rundown, predisposed constitution. Many diverse germs have been isolated in catarrhal exudates under the microscope.

As in all infections, people differ greatly in susceptibility to colds. Many are absolutely invulnerable; they don't know what a cold means, however much they are exposed to microbes. Others are constantly snorting and blowing their noses from Thanksgiving to the melting of the snows. There are a few misguided

citizens who consider that the right way to breathe is through the mouth; others can't help breathing that way because they have habitually congested and unhealthy noses and throats, and catarrhal upper air passages. All such people are very much predisposed to colds.

Food may sometimes have to do, indirectly, with catarrhs. Eating indigestibles—shell fish, rarebits and the like—overeating, or not eating enough, engenders the catarrhal habit, through the absorption into the blood and lymph of the toxins generated from undigested food.

Many a man has had a fatal cold, one ending in pneumonia, from a too generous dietary of incompatibles, helped along with even more generous potations. In such a case there is undue stimulation, followed by reaction, with perspiration, which lets the cold in to chill that vast peripheral sea of blood coursing through the dermal capillaries.

Many very young children of the poor have more or less catarrh; this would oftentimes be avoided if starches and meretricious sweets were reduced in their dietary. It is not so much that they are starved but that their food is improper for them.

Bad Teeth May Help to Cause Cold

Bad teeth are an enormous factor in the development of colds. It is amazing how many varieties of germs lurk about unclean teeth—twenty-six in one individual experimented on. Many a cold is obtained, and many a chronic catarrh is kept up, for this reason alone.

Everyone knows that there are epidemics of colds. Practically the whole force of an office, a workshop or factory, will, as likely as not, contract a cold from a single case. An employee coming into the office sneezing, snuffling, wheezy and thick of speech had best be sent home until he has recovered, no matter at what cost or sacrifice; it will be found to pay all around in the end.

How are colds to be prevented?

How to Prevent Colds

The first consideration, so far as modern living conditions will permit, is to live the physiological life.

This is to rise betimes, bathe well, eat slowly three meals of wholesome food a day; be in the sun and open air a great deal; drink generously of water, at least between meals; be very moderate in or (if not too inconvenient) abstain from the use of alcohol and tobacco.

No catarrh can be cured so long as a smoker smokes. Tea is far too much the tipple of women.

One should avoid dusty, damp and foul air; should work only in rooms well ventilated; should go to bed early and sleep at least eight hours, with a half-hour's afternoon nap or rest for those who can have this physiological luxury; should wear suitable underclothing all the year round—thin in summer, thick in the winter—warm night wear and woolen socks in bed if the feet are cold.

To get the feet wet is very conducive to colds. Warm footwear and stout water-tight shoes, preferably with cork soles, should be worn. Many women will not, but all women should, wear "arctics" or something of the kind in wet or snowy weather.

Need Plenty of Fresh Air

One should cover the chest well, but not so much that free respiration, upon which which good health so much depends, will be impeded.

It is best to sleep, well enough covered, with the windows wide open. Yet drafts must be avoided for all except those inured to them, or the very robust. This is easily arranged for by the use of a screen or blanket draped clothes horse.

Those living outdoors as much as possible can do more work without fatigue and digest coarser food than the sedentary. Pure air means the greatest possible consumption of oxygen—the breath of life, the life-giving, life-sustaining gas. This means ideally pure blood; which, in turn, means the conversion of oxygen and wholesome nutriment into a virile and healthy constitution. Plain food is indicated for the sedentary and for those of a catarrhal habit; very moderate amounts of the starches and sugar should be taken.

Cold Bath a Good Tonic

A cold sponge on rising is a good tonic; a cold plunge still better for those accustomed to it. Thus is the skin helped in its vital function of respiration, secretion and excretion. In any event the bathroom should always be warm, and vigorous friction should always follow the ablution.

A cold bath in a chilly room is likely to depress still further a weak constitution; in such cases tepid water should be substituted until one gets used to the cold water. The feeble may be able to endure the shock of a cold sponge by standing in a tub in which there is very warm water up to the ankles.

One may escape colds by avoiding the infective agents. When the papers tell of a grippe or a coryza epidemic, cars, theaters, public buildings and resorts had best be entered as little as possible. The imperfect ventilation in most of these structures renders them hotbeds of infection. Such air contains more disease-breeding bacteria than the pure atmosphere without.

One should never eat without having first washed the hands. Children should be especially taught not to "swap" things to eat, pencils or anything else that may be put in the mouth. Finally, one should never neglect a cold.

With a Visiting Nurse in Rome

KATE CAMPBELL MEAD

WHAT is winter like in Rome? Well, it is like March in Boston, like April in Montreal. Little daisies spring up and blossom in the old Forum. Cyclamen leaves unfold at the edge of the moist woods on the Sabine hills, and great acanthus plants curl themselves against the ruins of the palaces of the emperors on the Palatine heights.

Picnic parties on warm days sally forth by suburban trolleys to the hill towns of Tivoli, Palestrina, and Albano, or to the groves above Lake Nemi, there to pass the day in the sunshine, like Diana and her maidens long ago, on the slopes above the turquoise water. All too soon, however, the sun disappears, and a cold drizzly rain chills the marrow of one's bones, or to the delight of the school children, a snow flurry covers the ground for a few hours.

Underwood & Underwood

So the huge Colosseum gradually became ruins, superb in their decay. (The Arch of Constantine is shown in the foreground.)

Often the wintry winds blow from the mountains and whistle around the ruined temples, sending cold blasts down the narrow streets. But quickly again the "bel sole" shines, and throngs of human beings are drawn out into the sunshine, as by a great magnet, to pursue their domestic occupations on the steps of the churches.

Down in Trajan's Forum scores of sleek cats, black, yellow, spotted, or striped, lazily stretch and purr beside the broken marble columns, as sure of their rations as the doves in the great piazza. Street venders suddenly appear from dark alleys, and hungry mortals crowd around them, like bees in buckwheat, to buy their steaming beans or chestnuts.

Such is winter in Rome. Foreigners live in comfortably heated hotels, but the homes of the natives are in general as cold as the tombs on the Appian Way.

Houses Are Not Heated

In the houses of the old type, a pan of glowing charcoal may be wheeled into the dining room during mealtime, or a kerosene stove may be lighted for a few hours, night and morning, to take off the worst of the chill. Heavy curtains are drawn over the windows to keep out the cold air, and the beds are heaped high with covers. The kitchen fire is lighted for a short time to boil the macaroni or heat the soup, but much of the food is bought steaming hot at the public kitchens, and the restaurants are warmed by the food and the patrons. In the churches there is scant heat, but the new schoolhouses have so-called "central heating," and the pupils are much warmer there than at home.

Rome is a comparatively healthy city in these years; its drinking water is perfectly pure, and since the draining of the marshes there is no longer the dread of malaria, the old Roman fever of long ago.

But even before the time of Julius Caesar, great aqueducts brought good water from the hills to the city, and Caesar himself urged the people to increase their taxes for the purpose of draining those same swamps in the Campagna. But the people, in their selfish opulence, cared nothing for the health and vitality of the working classes.

Augustus felt that the masses needed education, and he built schoolrooms of marble for his pages and retinue. Hadrian and the men of his time thought nothing about health legislation, but they built beautiful hospitals for their servants and slaves, equipped with hot

baths and steam heat. Caracalla and Diocletian built enormous gymnasiums and baths where 16,000 people could sport at once, but their followers had neither money nor inclination to continue such expenditures and so the huge Colosseum of Vespasian and the famous race courses of later emperors gradually became the ruins, superb in their decay, which we still admire, a melancholy reminder of the "grandeur that was Rome."

American Red Cross Points the Way

Fifteen hundred years of wars and disease proved that Caesar was right. The Roman people lost heart, health and desire to provide for education or hygiene on any adequate scale until, during the Great War, the American Red Cross sent to Rome organizers who showed the people the advantages of health legislation, visiting nurses, and altruism in the management of their public institutions.

The present Red Cross association is entirely Italian, but it is carrying on the work according to American ideals. Many well-educated women are taking the training to become visiting nurses, studying the theory for six months and then for two months more doing the practical work under trained nurses.

Down in Trajan's Forum scores of sleek cats lazily stretch and purr beside the broken marble columns.

Visiting Nurses Being Trained

Already more than 100 women of the upper classes are engaged in school or rural nursing, teaching and demonstrating the principles of child welfare and the value of hygienic living. These nurses have not taken their courses from a get-rich-quick motive, for their salary is only $15 a month and the cost of living in Rome is not low. They work fifty-two hours or more every week and, although they have not had the training demanded in this country, they are welcome in all the homes where their services are needed; they give baths, take temperatures, train mothers in infant welfare, discover cases of malaria and tuberculosis, and give many simple forms of treatment and advice to the sick and forlorn.

Unfortunately, because these nurses have had no hospital training they are looked down upon by the graduates of the queen's training school in the great Policlinico.

This hospital is one of the two or three modern hospitals in Rome. It was opened with pomp and pride in 1903, being considered one of the finest hospitals in the world; but, alas, jealousy in its management caused it to be subdivided into three distinct hospitals, one under the university medical school, one under the church control, and the third under the patronage of the queen, who at once insisted upon modern nursing for her patients.

The queen sent to England for some of Florence Nightingale's nurses, and during the past fifteen years an English superintendent has been carrying on the finest training school east of England (save only that of the small American hospital in Paris, and the new Edith Cavell Hospital in Bordeaux). It is therefore quite natural that from the hospital point of view Roman Red Cross nurses are not properly trained.

The subdivision of the Policlinico is typical of other institutions in Rome where jealousy takes the place of friendly cooperation. Duplication of labor and wasted funds characterize the private philanthropies for child welfare, and provide for the few rather than for the many.

One of the modern "nests" for little tots is situated in a garden of ilex and cypress trees, close by the church of St. Gregory the Great, and under the very window of that tiny room, five feet by twelve, where the wise prelate kept his night vigils. Here in low pavilions on the south slope of the hill, forty babies from one to four years old live like princelings and grow strong and healthy. After they graduate at the age of four, however, nobody seems to know what becomes of them. The homeless probably are crowded into orphanages, lose their personality, and become mere numbers; a few perhaps return to their insanitary homes.

Modern Homes for Children

There is also another "nest" for sixty newborn babies whose mothers have tuberculosis. This is in a newer part of Rome, outside the Porta Pia through which the Garibaldians entered the city on that famous day, the twentieth of September, 1870. It also is the gift of another child lover who provided that nothing known to science should be left undone

to make this "Institute" a model training school for doctors and nursery maids as well as a perfect environment for the development of sixty lucky babies during their first year.

Here again there is no provision for follow-up care, and the little yearlings go back to their homes stronger and less likely to take tuberculosis, but without much more of a chance to grow up healthy.

As to older children; it was interesting one rainy day in February to visit one of their best grade schools, and to go with a school nurse to some of their homes; the streets were muddy and gloomy, and the schoolhouse (the gift of another philanthropic child lover) was over on the right bank of the yellow Tiber, not far from the famous Mausoleum of Hadrian. The building is unimposing and unadorned, without and within. A short flight of steps leads to the entrance hall, where the damp garments of the pupils were steaming on their pegs.

Underwood & Underwood

Foreigners live in comfortably heated hotels, but the homes of the natives are in general as cold as the tombs on the Appian Way.

Upstairs are the schoolrooms, where the boys and girls were as thrilled at the sight of a visitor as they usually are in America. They rose from little old fashioned benches to bow, recite, sing or do a few gymnastic exercises, every child eager to see and be noticed. They were somewhat undersized in comparison with American children, but the glow of health was in their faces and they grinned the wider to show their well-cleaned teeth.

Down in the basement is the cheerless dining room, where the few who were undernourished sat at a long table and ate macaroni from pewter bowls, or drank their milk from pewter mugs. Sometimes a thin soup containing a thick slice of bread takes the place of the beloved macaroni, and occasionally they have cocoa, but they must eat what is set before them.

In the basement also are the toilet and bath rooms. Cement tubs are built into the cement floor, and a nurse bathes a dirty child only once. The mother must take the hint or the police are notified. It is the same with the care of a child's scalp, one application of kerosene, and then the police, if necessary.

The toilets are simplicity in the extreme. In the cement floor shallow trenches are sunk, provided at regular intervals with oblong slits. Each slit has a footplate on either side on which the child squats. A constant stream of river water flows through the trenches, carrying away all traces of odor, urine and feces. There is no privacy in either the boys' or girls' toilets, which are, however, scrupulously clean.

On the top floor of the building is the medical department, where a very grave doctor and two smiling nurses reign supreme. They weigh and measure every pupil twice a year, keep elaborate records of the health of each one, and do the same sort of follow-up work that is done in England and America. The medical chest or closet contained a few surgical dressings, a mercury wash for skin diseases, boric acid and carbolic solution, and aromatic spirits of ammonia. The doctor showed his disease charts, which list all the ordinary epidemic diseases except whooping cough, which is rare among the Romans. Influenza was, however, quite prevalent, and many pupils had been absent a long time.

Little Journeys with a Nurse

Accordingly, to hunt them up, a little journey was made with the nurse to the homes in the neighborhood.

In the first house, up a long, dark flight of stairs, we found a thin, pale little boy whose neck was swathed in a muffler to his ears. His glands were swollen after scarlet fever, and in that sunless room with its brick floor and its death-like chill he was making a slow convalescence. The rooms were clean and tidy, but a geranium in the one window was the sole sign of

On the banks of the "tawny Tiber" not far from St. Peter's dome is a model school building where Italian children are taught hygiene and are kept well while they are getting an education. The school has a medical staff and complete health records are kept of each pupil.

luxury. In a corner of another room was a combination sink, cupboard, and charcoal brazier over which the daily rations were cooked in as short time as possible.

The second home was above a dark wash shed where all day long old women did laundry work and pounded clothes on the wet stones. The whole building was moldy, and in a dark corner of one room lay a little chap with his arm in a sling. He had had an injured hand and his mother had poulticed it with manure. The whole arm had became infected and he had been twice operated on at a nearby hospital in order to save not only his arm but his life. Here again there was a long convalescence, and months lost from school.

It is no wonder under such circumstances that the Italians love the "bel sole" and the warm out-of-doors in the winter as well as in the summer. These damp, dark homes are typical of the homes of cab drivers, artisans, flower venders, and war widows. It would be natural to rebel against the fates that seem to deal out riches to some and poverty to others.

As the writer picked her way through the narrow muddy streets toward the great golden statue of Victor Emmanuel and the brilliant shops, she could not but feel that it was time for Italy to be wrenched from its misery and to emerge once again into its former brilliancy. But how is this possible?

Fascisti May Bring Awakening

Who knows if the Fascisti movement may not be the determining factor in a revival of hope and courage and ambition throughout the country?

If the school children learn to observe the laws of health, and if the next generation has new energy and generosity in cooperating for the general good of the public, then the Roman institutions will be fitted not to rival but to supplement each other.

Homes, hospitals and schools will be health centers of a race as proud of themselves as of their great past; and with more trained nurses, warmer homes, wider streets, better pavements, less mud, and no indiscriminate spitting, Rome will become a winter resort to attract tourists from all over the world. Its sunny days far outnumber those that are cold and wet. Palms live out of doors all winter, and there is no month when flowers may not be picked in the open or oranges found growing on the trees.

"Neighborly Diseases"

I. Scarlet Fever

LUDVIG HEKTOEN AND ETHEL B. PERRY

THE fear of diseases, even of those disorders peculiar to their period of life, happily does not trouble children. Their behavior is admirable, a good example for adults, for facts about unwelcome subjects are after all only for understanding and guidance and not for worry.

Over ninety per cent. of all scarlet fever is among children under ten, with the greatest number of cases during the years of three to six. Possibly this is because growing legs and curiosity multiply intimate relations with others, particularly of the same age, in the street, at home, and in the schoolroom.

During the colder months too there is more scarlet fever. This may be due to lack of sunshine, sudden changes of temperature, more frequent wet feet, long hours spent indoors in "close" rooms, or other reasons, but the fact remains. Even epidemics that occasionally come in the summer seem to be worse if the weather is cold and damp.

Scarlet Fever Is Wholly Preventable

The greatest danger to life is for very young children, so prevention of infection for a few years means one of two things: the child does not catch scarlet fever at all or, if he does catch it, his chances for complete recovery are better.

Scarlet fever is a definite infectious disease, wholly preventable. It is spread only by discharges from the infected person, and the danger from this material does not depend on the severity of the illness.

These infectious discharges are commonly from the nose and throat but may also be from any infected part, such as a running ear or a draining abscess. Tiny droplets of moisture expelled from the nose or throat by a cough or a sneeze may fall directly upon the mucous lining of the nose or mouth, or upon the abraded skin of a person standing near. This spreads the disease by direct contact.

If the person whose lips have just been contaminated leaves the room, goes to other children and perhaps kisses them, the disease is spread by "contact" but indirectly. Droplets and even larger amounts of discharge are sure to fall on nightgown, bedding, dishes, pencils, papers, books, food and other things about the sick person. Further spreading is only too easy by such means as handling things in the sick room, and then going out among other people or preparing food *without washing the hands*, or by putting the hands, before washing, to the nose or mouth.

Contaminated articles put away in drawers or closets will keep the infectious material for months, even more than a year. Eventually some child gets hold of such an article and an "unaccountable" case occurs from this long, needless series of contacts. It is plain why scarlet fever is sometimes called "a neighborly disease."

Milk Handlers Often Spread Disease

Milk handled by persons with scarlet fever germs about them becomes a most dangerous carrier. Hundreds of epidemics have followed the lines of distribution of milk from certain dairies. At one time it was thought that the cows had the disease and transmitted it through the milk to the children. In each instance however a human contaminator of the milk has been found.

In Massachusetts during the period 1909 to 1914, 845 cases of scarlet fever were traced to milk, and in a recent study by a Chicago health commissioner one single milk route was found accountable for 245 cases. Pasteurization of milk prevents it from carrying scarlet fever, but the first safeguard should be the prevention of contamination by allowing no one who has any contact with the disease to handle milk.

So here and here alone lies the chance for prevention of scarlet fever. Every person sick with the disease should be so confined that all discharges may be kept from contact, either direct or indirect, with other persons. This means, first, that all nasal or similar discharges must be caught on papers or cloths that can be burned at once; second, that no article should be taken from the sick room until it has been disinfected; and third, that no person leave the room without removing a protecting garment and washing his hands. No person who takes care of a scarlet fever patient, has been in the room near one, or has recently had the disease himself, should mingle with children or should handle food, especially milk. This is complete "isolation" of the patient.

Thus prevention of scarlet fever is not only possible, but it is all important for there is no "cure." Once a child has come down with this fever it will finish its course, so the best

care should be given to the child and the rules for "isolation" strictly followed.

Mother's Part Is Most Important

The mother's part is, as usual, the most important. Upon her doubtless falls the responsibility not only of tending the child during the period of sickness and isolation, but also of deciding in those first few moments what may be the matter with the child. Should a doctor be called? What is to be done before the doctor comes? She should know the typical case of scarlet fever.

The child "exposed" by getting the virus either directly or indirectly in his mouth or nose shows no sign for a few days—sometimes seven, more often two to four. This is the so-called "incubation" period.

Then suddenly, often in the night, the child is sick. Vomiting, sore throat, headache, possibly a chill or a convulsion, and a feverish look with flushed cheeks, bright eyes, and a dry hot skin are classical signs, though all may not be present. The tongue is furred, the appetite gone and thirst is increased.

Within twenty-four to forty-eight hours small red spots come out on the flushed skin of the chest and neck, then spread, reaching the legs last. The color brightens to a vivid scarlet, then fades and disappears in from two to seven days. The skin becomes dry and rough and general scaling occurs. (Peeling of the hands and feet—thick large pieces from the palms and soles—is a different thing which happens in the third or fourth week.)

The fever goes down as the rash fades, if there are no complications, and the child becomes less restless. The tongue becomes red at the edges, then red points show through the coating, making a "strawberry tongue." The urine is high colored and scanty. And during all of this time the throat is sore, or at least seems to be the place of infection, and there is danger of giving the disease.

Should Isolate for 28 to 35 Days

Confinement of the patient is usually necessary for twenty-eight to thirty-five days, possibly longer.

Not every case is so clear-cut. There are variations in severity, and the use of different names, such as "scarlatina" and "scarlet rash," may be misleading; the disease is still scarlet fever with all of its dangers. "Treacherous beyond all other diseases," one doctor describes it, because of its abrupt onset with no warning, and because its "light" cases may become extremely serious, leaving the child with troublesome or dangerous secondary effects, such as "Bright's disease," running ears, deafness, or heart trouble.

The "light" case is a double menace. The child himself suffers from a lack of careful attention, and the community is in danger because the sickness is not recognized or the patient is only half-heartedly and imperfectly isolated.

Parents with a knowledge of symptoms are prepared, should a child become suddenly ill with vomiting and a sore throat, or perhaps with nothing but the signs of a hard cold, to be thoughtfully and actively suspicious. The only safe course is plainly to put the child in a room by himself. Such a room should be pleasant, well ventilated, and suitable for several weeks' "residence" and isolation, if the suspicions prove correct.

Before the Doctor Comes

The doctor is called, but before he comes the mother will realize her chance either to stop or spread the infection. So she will take the precaution of wearing a protecting gown to be left in the room, of washing her hands after each visit, and of staying away from the other children. Other children will be kept from school, preferably not confined indoors, and watched during the seven days period of incubation.

Before going out after recovery, the doctor's approval of the throat condition should be given. Then the child should be bathed, the hair washed, and clean clothes that have not been in the sick room put on. The number of "return" cases, that is, new cases resulting from too early release from isolation, is a warning. It is hard to keep a seemingly well person confined, but a few days or a week are well spent for safety.

The sick room should be cleaned and aired, according to the directions of the health officer.

Thoughtful members of any community can, with these essential facts in mind, see for themselves what is best for the protection of their own and other children. For instance, it is well to avoid and to teach the children to avoid making unnecessary visits to sick people, particularly before the nature of the illness is plain; to respect a warning sign on a house; to keep away from those recently recovered from scarlet fever, from those having suspicious symptoms and even from those "exposed" to the disease.

To Safeguard Other Children

How grateful any mother is to her neighbor who keeps her "exposed" child at home until she knows there is no danger!

Conscientious care of one's own child in such cases is of great social importance, not only in the display of sensible, intelligent, directed response to a troubling situation, but especially in the consequent saving of others from suffering, possible loss of life, and expense; for one sick child not completely isolated may—as you have read—spread the infection to hundreds.

New Weapons Against an Old Enemy

What the Tuberculosis Movement Has Contributed to the General War on Disease

ALLEN W. FREEMAN

EVERY great war develops new methods and new weapons. The war against tuberculosis was by far the greatest movement in the whole history of man's fight against disease. Like other great wars it developed new agencies and new methods of attack and these have revolutionized the whole character of the public health movement.

When the tuberculosis movement began, toward the end of the nineteenth century, the methods in use in preventing disease had been but little affected by that great increase in knowledge regarding the true causes of communicable diseases which had come during the preceding thirty years. The work of the health departments of that day was exceedingly simple and consisted for the most part of what was called general sanitation on the one hand, and of quarantine and disinfection for communicable diseases on the other.

No Job for Inspector or Fumigator

To face the task of preventing tuberculosis, with only such weapons and methods as these, was an apparently hopeless undertaking. The prevention of tuberculosis is exceedingly simple in theory but very complicated in practice and of course enormous in extent. It is certainly not a job for a sanitary inspector or a fumigator. If even moderate success was to be expected, entirely new methods and new types of workers must be developed, and it was to this task that the pioneers addressed themselves.

Stated simply, there were in the population of the country at that time hundreds of thousands of people who were in the advanced stages of consumption. Each of these was giving off in his expectoration each day millions of tubercle bacilli.

Infection Spread Through Ignorance

These infected people were exposing those nearest and dearest to them to the danger of infection through the intimate contacts of family life. They were also exposing the general population to the same dangers through their careless spitting in halls, elevators, churches, stores and public places of all sorts, and through their use of public drinking vessels. Many of these people were totally ignorant of the true nature of their malady and practically all were ignorant of the fact that their expectoration was dangerous to others.

The first step in the effort to prevent tuberculosis, therefore, was by some means to secure the destruction of the tubercle bacilli which came from these persons before they could infect others.

Workers Faced Gigantic Task

In addition to these advanced or active cases, there were hundreds of thousands of other persons who were in the early stages of the disease who would, without prompt and proper treatment become active cases. It was imperative that these cases be found and brought under proper treatment before they became too far advanced.

No one knew how many cases, early or

Photos Courtesy Maryland Tuberculosis Association

One of the most effective weapons against tuberculosis is the outdoor school. Although created primarily for the prevention of this particular disease, it has been found to be a general health builder. Pupils of outdoor schools seldom have colds or other respiratory diseases.

advanced, there were, and no one of course knew who or where they were. Only from the death certificates of the fatal cases was any information available as to the extent of the disease, and this information, incomplete and inaccurate as it was, came too late to be of any value so far as that particular case was concerned.

Public Thought Disease Inherited

The general public was not at all interested in the disease. It had been taught to look upon the disease as inherited and hence not preventable, and as almost surely fatal once it had developed.

There was only one method of attack that offered any promise of success. That was to obtain the interest and support of the general population, particularly of persons with the disease and of members of their families.

Only through the combined efforts of a very large number of persons could so gigantic a problem be solved. Millions of people must be taught the simple facts about the cause, the prevention and the cure of tuberculosis, and must be taught in such a way as to enlist their active interest and cooperation.

There was no precedent for such an effort. Knowledge regarding the disease was generally regarded as the peculiar property of doctors, something rather mysterious about which the less the general population knew the better for them. There was no machinery for teaching the adult population these new and vital facts so necessary to the prevention of the most destructive of all diseases.

Undaunted by these obstacles, the early workers plunged into their task. Starting with simple circulars, prepared by health departments, developing carefully worded newspaper articles and lectures, the campaign of education progressed slowly until 1903, when a tuberculosis exhibition, a miniature country fair, but devoted entirely to demonstrating the facts that the people should know about tuberculosis, was held in Baltimore in 1903. The very novelty of this exhibit attracted thousands of persons and greatly stimulated interest in the whole subject.

From this time on the educational propaganda expanded rapidly, and practically every known method of conveying information was utilized at one time or another. It was a securely isolated individual indeed who was not at some time during the next decade brought under the influence of the propaganda.

That the campaign of education was effective was soon demonstrated by the quickening interest in the subject everywhere, the passage of laws requiring that the disease be reported, the establishment of sanatoria and hospitals for the treatment of cases, the formation of tuberculosis societies and associations, and the contribution of increasingly large sums of money to be used in the work.

Daring and revolutionary as the campaign of education on tuberculosis had been, and doubtful as success seemed at the start, it opened a new chapter in disease prevention and brought the aid of thousands where only individuals had worked before.

To start a similar campaign became a standard procedure in each of the successive forms of health activity that followed after the tuberculosis campaign. At the present time the most important function of any health organization is universally recognized to be its teaching function. If the general public can be taught how any disease may be prevented, prevention follows as a matter of course.

Tuberculosis Clinics Were Next Step

Popular education alone, however, could not prevent tuberculosis, however extensive and complete it might be. Thousands of persons could be brought to suspect that they had tuberculosis, but until this suspicion could be confirmed by a physical examination, no effective action would follow.

The tuberculosis nurse first demonstrated the fact that the real problems of health and disease can be attacked in the home.

Only a few physicians possessed the skill and experience necessary to make an accurate diagnosis in the early stages of the disease, when diagnosis was most important for both prevention and cure. The services of these physicians were not available to the great mass of the population who needed them most.

Early in the campaign, therefore, efforts were made to meet this need, and before many years the tuberculosis clinic was developed. Here, usually in simple and inexpensive surround-

Even the elephant participates in the tuberculosis campaign. Every known method of conveying information is said to have been used in the war against tuberculosis.

ings, a physician especially skilled in tuberculosis would be available to examine and advise all who came knowing or suspecting the presence of tuberculosis. There was no charge for this service and no attempt was made to limit it to persons actually indigent.

The tuberculosis clinic was an invaluable weapon in the fight on tuberculosis, but more than that, it showed the way in the attack on other diseases. It was soon followed by the infant welfare clinic, the venereal disease clinic and the like, all however designed for the prevention rather than the cure of disease.

It is not too much to hope even that in time these clinics, all modeled on the original tuberculosis clinic, will aid in making effective that most important but now almost totally neglected function of the private practitioner of medicine, preventive service to his patients.

Carrying the Battle into Homes

The tuberculosis clinic had not been very long in operation when another pressing need disclosed itself. Patients visiting the clinic were frequently given instructions regarding diet, rest and outdoor sleeping which they were unable to carry out under the conditions actually existing in their homes. Other patients attending clinics for a time were forced to discontinue as the disease became further advanced. In addition, many patients were found confined to their beds and unable to come to the clinic and for whom treatment in an institution was, for one reason or another, out of the question.

To go into the homes of these patients and to teach the patient, and particularly the family, the simple but vitally necessary things to be done to lessen the danger of infecting others in the family, as well as to arrange for the proper care of the patient himself, was absolutely necessary.

Some tuberculosis patients had previously been visited by the so-called instructive visiting nurses. But these nurses, attending as they did all forms of sickness, could assume supervision of only a very small part of the tuberculosis cases needing their attention.

Special nurses, working much as did the old-time visiting nurses but devoting their whole time and attention to cases of tuberculosis, began to be employed here and there. Within a few years the tuberculosis nurse, whose mission was primarily prevention rather than cure, was a familiar figure in our cities.

It was not long after this that persons interested in other phases of preventive medicine, particularly in preventing infant mortality and in improving the health of school children, began to employ nurses for similar services and from the small beginnings of the tuberculosis nurse has developed the whole modern movement of public health nursing.

The work of the tuberculosis nurse was of great value in preventing tuberculosis and in assisting in the cure of persons with that disease, but it was of even greater value in demonstrating that the true future of health work lay not in the tacking of placards or the enforcement of laws but in intelligent and devoted service carried on in the homes of the people who most need health service. It was the tuberculosis nurse who shifted the emphasis in health work from the health office to the home. There, and only there, bedside service and effective teaching could be combined and focussed on the real problems of disease at their point of origin.

The three great contributions of the tuberculosis movement were, therefore, the demonstration of the value of general educational

methods, the development of the preventive clinic and the organization of an entirely new agency, the public health nursing service.

These methods, or variations of them, form the backbone of the general public health program at this time, and they are all directly the outgrowth of the tuberculosis movement.

Milk Pasteurization Begun

Other less direct but equally important contributions were made. Recognition of the importance of tuberculosis of cattle as a possible source of tuberculosis in human beings and the demonstration of the presence of tubercle bacilli in milk were important and probably predominant factors in promoting the general pasteurization of city milk supplies. The reduction in typhoid fever, diphtheria and scarlet fever which has followed general pasteurization of milk wherever it is adopted are, therefore, indirect but more or less positive results of the war on tuberculosis.

After all, perhaps the greatest effect of the tuberculosis movement has been to focus public attention on the possibilities of disease prevention and to enlist the interest and support of millions of people in the general subject.

Tuberculosis was so widespread a disease that few families escaped its ravages and in consequence almost everyone had a direct and personal interest in its prevention. Once this interest was aroused in connection with this disease, it was but natural that it should extend to cover the whole problem of disease prevention.

It is not too much to say, therefore, that the whole modern movement for disease prevention with all that it has meant in improved general health, in controlling so many diseases and in making life generally happier and more worth the living, is only an outgrowth of the vision had by those early workers who first saw tuberculosis as a preventable disease and had the courage to attack it.

Making the Cadet Physically Fit

L. R. GIGNILLIAT

THE physical well-being of its students should be one of the first considerations of the preparatory school. There is a serious omission when the body is neglected in the schooling of the youth. The boy with the flabby muscles and short wind is beginning life under a handicap which his school should help to remove.

Physical development is regarded as an essential factor in most preparatory schools today. Practically all seek to encourage and promote a general participation in healthful and wholesome games and play and provide complete facilities and equipment for a wide variety of athletics and recreational activities.

Prudent in Athletic Program

Prudence is, of course, exercised to see that athletics are not over-emphasized, for it is well understood that too much athletics would be quite as harmful (and perhaps more so) as none at all. The physical phases of training have been developed after much study and experiment, and a system of physical upbuilding is employed in the light of medical knowledge.

Health, sanitation, and food supply, as well as the body, are things carefully supervised by the medical attendant of the preparatory school. Periodical inspections are made of kitchens and dining rooms, food stocks, and the herd supplying the milk.

Students who are indisposed are expected to report for attention. Students are also encouraged to report promptly seemingly minor injuries or ailments in order that prompt action may be taken and threatened trouble may be checked at the source.

With the assistance of the athletic department the surgeon's staff makes a thorough medical and physical examination of every new student at the time he is enrolled, and at the opening of each term of school all returning are examined as a safeguard against bringing in contagion.

New Student Is Duly Charted

New students are stripped and photographed against a charted background ruled to show height measurements and the natural posture at the time of entering school. Every individual comes under the closest scrutiny and note is taken of malformations that may be corrected or relieved by physical exercise, and a complete record is made of the condition of the eyes, blood pressure, lungs, heart action, etc.; where remedies are needed they are recommended before the school work begins. Care is taken to see that shoes and clothing are of proper size and comfortable fit.

Two weeks after the initial examination a second check is made to ascertain how the boy is adjusting himself to his school duties and his physical program. Separate medical and

physical records are kept up to date and show physical progress through the entire school career.

Boys who are found underconditioned or deemed too frail for the more vigorous and exacting sports are restricted by the surgeon's orders to *modified* athletics—games and exercises that are only mildly exerting and that are helpful in removing defects.

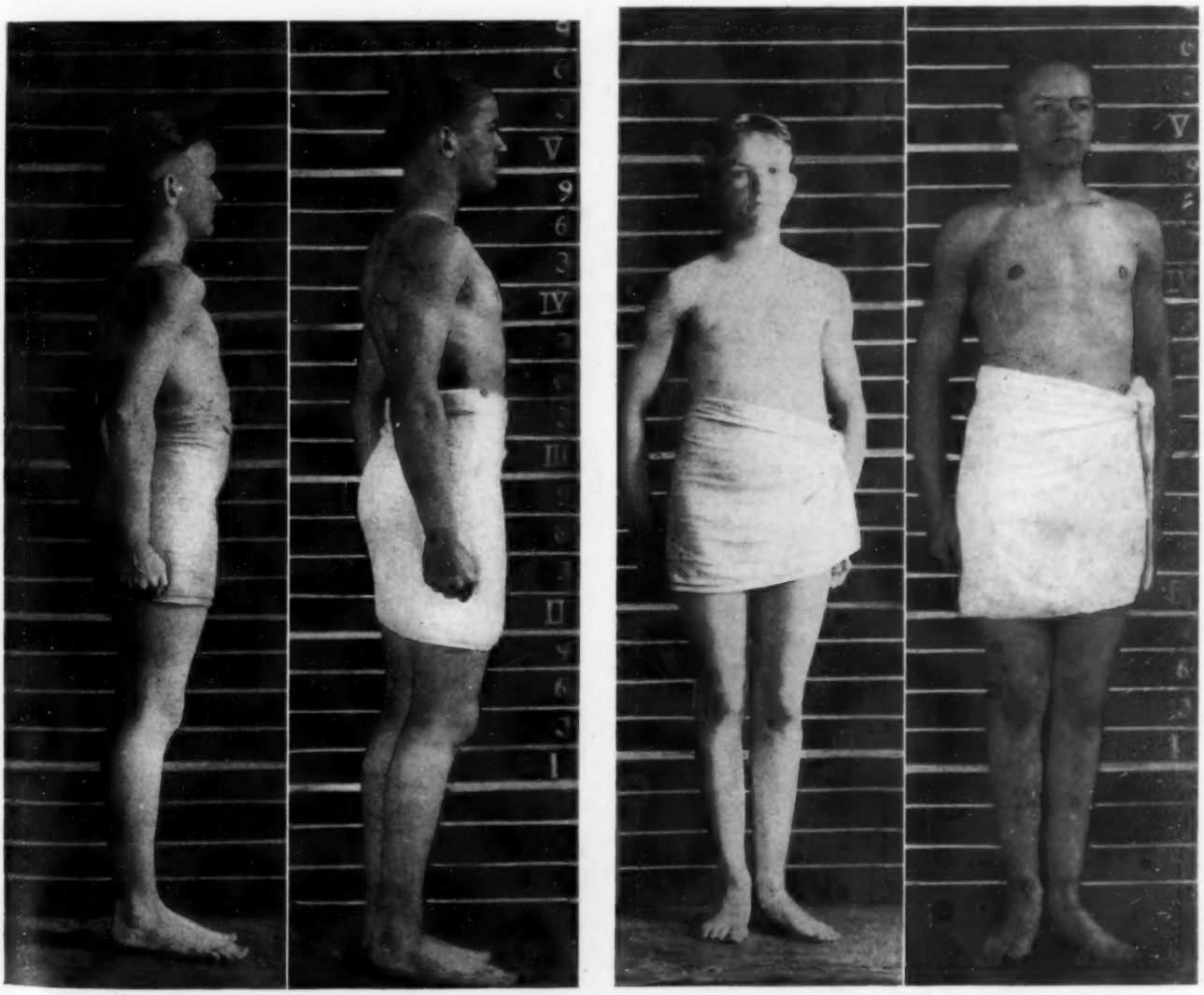
Such malformations as flat feet, slight curvatures, round shoulders, and faulty posture are noted and those so troubled are assigned to *remedial* athletics or gymnastics and are put through regular drills each class day under the direction of a trained physical instructor.

Remedial Work Is Not Compulsory

Remedial work is not compulsory, but parents and cadets have shown no disposition to forego such benefits. The aim is to overcome completely every curable deformity; special equipment has been provided for this work and arrangements are made for the student to spend liberal periods in his remedial exercise. Marked improvements result in practically every case, and it has been demonstrated that even pronounced defects can be largely corrected if reasonable time and effort are devoted to the prescribed drills.

Experience has shown that regular physical work in the gymnasium or on the playfield improves the student's capacity for class work as well as his health. He benefits mentally as well as physically. Further, athletic competition is an efficacious means of building character as well as strength and mental alertness. On the playfield, under proper supervision, is inculcated the spirit of fair play and team work, and the will to win. At the same time the boy learns that important lesson about being a *good loser*.

The objective sought is of 100 per cent. voluntary participation in competitive sports and games with the idea of benefiting the individual rather than building up a few championship varsity teams. In developing



One of the most underdeveloped boys who entered a certain military school in September, 1920, was this chap who is now a cadet captain and one of the most manly and upstanding cadets on the campus.

Flat feet, slight curvatures, round shoulders and faulty posture are corrected by remedial athletics or gymnastics. Boys who are too frail for the more vigorous and exacting sports are restricted by the surgeon's orders to modified athletics.

all the men the teams have taken care of themselves as the natural result of the talent brought out in the all-round system which brings every student into the play and enables the coaches to observe exactly what each can do best.

There must be no side-liners on the athletic fields. Every boy is in the game because he wants to be. In drawing all the men into play, the widest channels for intramural competition are opened and intramural games are raised in importance almost equal to the varsity sports. Teams for play in all the leading sports are organized by each of the school organizations and a *jungle league* thus brought into being absorbs all the surplus talent. One does not have to be a star in order to get in the line-up.

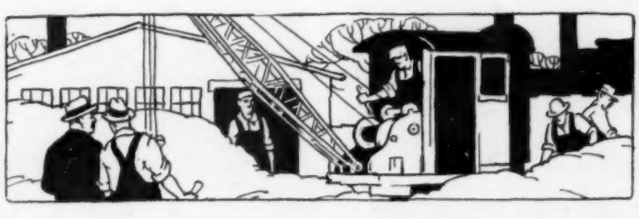
A point system is adopted and prizes offered to those organizations whose members make the best showing in athletics. Pride in his organization's standing naturally leads every boy to do his best to advance his own organization's rating by earning as many points as possible, and even though loyalty were not sufficient to stir the languid none would be willing to be counted outside the pale of the *doers.*

Each day all the boys may be assembled on the campus for fifteen minutes of mass calisthenics. This exercise, executed in cadence, comes best in the late morning, being timed to break the academic recitations and take the minds burdened with lessons out of the class rooms into the open air.

The physical benefits of drills and maneuvers are pronounced, particularly in influencing precision of movement and erectness in carriage; riding makes for balance and grace, and from the marches and the frequently executed drills with wands and guns come endurance and unity of action.

Such activities, combined with the athletics and play, furnish the exercises that are indispensable to keeping the boy sound and fit.

The resultant of this cultivation of sinew and nerve is a schoolboy fortified at graduation with the foundation to withstand the bodily demands that may be expected in mature life.



Plain Facts about Health and Disease

HEALTH NEWS OF THE MONTH

Inoculating for Scarlet Fever

The announcement that Drs. George H. and Gladys Henry Dick, of the John McCormick Institute for Infectious Diseases, have been successful in inoculating healthy persons with scarlet fever, and that they have produced a skin test for use in scarlet fever which shows whether or not a person is susceptible to—able to become infected with—the disease, was the significant factor in the health news for the month.

For many years the ubiquitous germ known as the streptococcus was known to have a definite relationship to scarlet fever, but the work of these investigators has definitely incriminated a certain form of streptococcus differing in its action toward some of the tests used by bacteriologists.

One of the most important parts of the work done by the Chicago investigators was the demonstration that the action of these streptococci on the human body depends on the elaboration of a toxin, or poison, by the germ. Recovery follows the production of an antitoxin by the body of the patient. For instance, it has long been known that the injection into patients, acutely ill with scarlet fever, of a serum from a patient who was convalescing has a beneficial effect. The explanation is that the convalescent has developed within his blood antitoxin for the toxins of scarlet fever.

The same method applies in the production of diphtheria antitoxin. A horse is injected with the toxins of diphtheria bacilli and the serum of the horse is the antitoxin used in specific cure of the disease.

It appears then that the Dick skin test may assume the same importance in scarlet fever as does the Schick test in diphtheria, and that the discoveries recently made may lead to specific methods for the prevention and cure of the disease.

Typhoid Fever Death Rate

This month the *Journal of the American Medical Association* published the results of its twelfth annual survey of the typhoid death rates in the large cities of the United States. As a result of improved methods of sanitation, antityphoid vaccination, and particularly proper attention to water supply, the typhoid death rate has been reduced from such figures as 16.0, 15.7, 41.7, 15.8, and 13.5 deaths per 100,000 persons, which obtained in Boston, Cleveland, Philadelphia, Chicago and New York during 1906 to 1910, to 1.0, 1.7, 1.7, 1.9, and 2.4 for the same cities in 1923.

Every one of the twelve largest cities in the United States had a typhoid death rate under 5.0 for 1923. Norfolk, Virginia, leads the honor roll with not a single death from typhoid during 1923. New Bedford, Yonkers, and Hartford had only one death each and Providence only two deaths. The dubious notoriety associated with trailing the list is accorded to Dallas, Trenton, Nashville, Memphis and Atlanta. Trenton is supplied with filtered Delaware River water and the *Journal* believes that its persistently high rate demands investigation.

During 1923 Chicago also suffered a severe typhoid epidemic which was definitely traced to pollution of the water in the lake to a point at which moderate chlorination could not control it. It is pointed out that filtration of Chicago's water supply is being discussed in engineering circles, but until something is done to check the ridiculously large waste of water, the financial burden of filtration could hardly be undertaken.

Radio-ing the Heart Beat

One of the problems of medical teaching has been the development of some method whereby large numbers of students could listen to the heart-beat, or other sounds within the chest of a patient, at the same time.

Such a device has now been perfected and is in use in the clinic of Dr. Richard Cabot in the Massachusetts General Hospital. The apparatus is described by Dr. C. J. Gamble and D. E. Replogle of Philadelphia.

The essential part is an electrical amplifier designed for three successive magnifications of the current changes produced in a sensitive transmitter. For this purpose three element vacuum tubes such as are used in the ordinary radio receiving set are employed. In addition it has been necessary to devise special wiring which would transmit all sounds free from distortion. A special form of transmitter had to be developed, and this was enclosed in a brass case

to prevent the intrusion of extraneous sounds.

In distributing the sounds to be heard an individual receiver is provided for each student who may plug in directly at his desk. Obviously the new method opens up great possibilities for medical teaching. Heart or lung sounds may be transmitted for considerable distances and the examiner may speak directly into the device and thus convey his comments on the conditions observed.

Thus far it has been impossible to use the loud speaker because more delicate sounds are lost. Undoubtedly at the present rate of improvement in radio apparatus further developments in this line may be confidently anticipated.

New Methods of Locating Cancer

Doctors A. Kotzareff and L. Weyl recently published in the *Presse Medicale*, Paris, a method of locating cancer or other new growths within the human body. For some time, it has been known that radium emanations would have specific effects on cancer or other rapidly growing tissues.

The new method involves the withdrawing from the body of a certain amount of blood; from this blood, the serum is obtained, and to the serum is added a definite dosage of radium emanation. When this is injected and a photograph of the body made, its presence in various tissues is manifested on the photographic plate.

When the method was applied to a pregnant guinea-pig, it was found that after a certain period of time, the radium emanations located in the embryo and disappeared from the remaining tissue. In the same way, the emanations tend to locate in tumors of a malignant character, such as cancer. The experiments have been repeated many times, but not in a sufficient number of verified human cancers.

If the results are confirmed, they will unquestionably have far reaching effects on the clinical detection and treatment of new growths.

M. F.

AGAINST WHAT SHOULD WE BE VACCINATED?

MANY centuries before the birth of scientific medicine man began inoculation with smallpox in order that he might experience a mild attack, which he had observed gave effectual protection against the severe and often fatal form of the disease. There were disadvantages in this procedure, though it did give one an opportunity to select a more convenient time and place for having the disease.

Jenner established the fact that inoculation with cowpox virus gives effective protection and is much safer. This, the first field of preventive vaccine, remains the most important.

Vaccination against smallpox is firmly established and is one of the greatest contributions to human welfare, but it has its limitations. The protection remains practically perfect for only about three years; though a smaller degree of protection remains for a good many years longer—just how many years varies in individual cases. Usually, two vaccinations with an interval of several years give life-long immunity against any ordinary exposure. A good rule is vaccination at six months, at six years, and again when smallpox is likely to be encountered.

Perhaps next in order of importance is inoculation against diphtheria, a development of recent years and a measure with great life-saving possibilities in a limited field—a field limited to young children because fatal diphtheria is not common after the age of ten.

But susceptible children (and susceptibility is readily determined by an appropriate test) should be given the preventive agent which is known as toxin-antitoxin mixture, a combination of the poison generated by the diphtheria germ and the antitoxin which neutralizes the poison. The evidence all indicates that by this means diphtheria, as a cause of sickness and death, can be reduced to negligible proportions. As the immunity is but slowly developed, this is not a procedure to be employed after exposure to the disease.

Vaccination against typhoid fever has proved successful under military conditions, and unquestionably is very effective in preventing the disease under all conditions, but, ordinarily, there are other and better means of reducing typhoid in communities.

Certain other forms of preventive inoculation are available in emergencies; for example, the man who has suffered a wound which is soiled with earth or manure should have tetanus antitoxin; the susceptible child exposed to diphtheria should be given diphtheria antitoxin; and any person bitten by a rabid animal should have the Pasteur treatment.

Beyond these tried and proved agents for preventive inoculations there are a number which are of uncertain value, notably the vaccines for the prevention of colds and pneumonias; these cannot be said to be on a basis secure enough to warrant general use.

It should be understood that all that has been said concerns the use of these agents on well persons; they have no bearing on the treatment of disease, where problems arise which in every case the physician must decide for his patients.

G. W. McC.

MAH JONGG DERMATITIS

"PUNG," said the large, positive club woman, and she carefully lined up three number four bamboos in front of her tile rack; then she meditatively rubbed her eye.

Next day she called on her physician and after a long, careful questioning and a study of the red spots and blisters on her fingers and the skin around her eye, he told her that she was suffering with "dermatitis venenata" due to contact with lacquer containing *Rhus vernicifera.*

Thus we introduce a new vocational, or better, avocational skin disease, known as Mah Jongg dermatitis.

"Dermatitis" means inflammation of the skin, and "venenata" refers to that variety caused by the application of some chemical or irritant externally. Many years ago the condition was described by physicians, who discovered that certain chemicals would frequently cause eruptions. Some time ago a British physician described certain cases that he had seen in the Orient, and another investigator told of a case that had appeared in a gardener who developed large wheals on his skin after repotting young plants of the Japanese lacquer tree.

Finally in 1918 a Japanese named I. Toyama published a study of the subject in which he told how he had been able to produce an eruption on the skin with lacquer taken from an antique jar which had been buried in a Japanese room for about a thousand years.

Already about eight cases of this unusual complaint have been described by American physicians. In every instance the story was the same. The patient had played Mah Jongg some twenty-four hours to two or three days previously. The Mah Jongg case had been varnished freely with Japanese lacquer and in some instances, the lacquer was still soft and sticky.

Patients first noted burning and itching of the skin where it had come in contact with the lacquer; then red spots and blisters developed. After a few days, particularly on the application of sedative lotions and removal of the lacquer, the condition quieted down and disappeared.

The final proof that the skin eruption had been caused by the lacquer was the application of a method so definite as to have become a routine in the scientific study of special sensitivity to various chemical and bacterial substances. The lacquer was scraped from a Mah Jongg box, an extract was made of it with a small amount of fluid, and it was applied to the skin of the patient. The eruption appeared at the point to which the lacquer was applied.

No doubt some hundreds of thousands of Mah Jongg sets are now in use in the United States, and thus far only eight or nine cases of the skin irritation now called Mah Jongg dermatitis have been reported. As physicians are on the lookout for them, others may soon come to light.

Prevention of the disease would seem to depend on a certainty that the lacquer has been well applied and thoroughly dried before the boxes were shipped. Furthermore, not every one is sensitive in an equal degree. Those who are especially sensitive will, we fear, have to be content with dominoes, rhum, or auction bridge.

M. F.

PLAY OR PLOW?

LET the farm child play! Plenty of exercise in the open air should produce good health. But unfortunately the exercise the farm child gets is often one-sided. His major muscles get too much use, the auxiliary ones too little. His body does not develop symmetrically.

Observations made during the World War proved that the farm-reared young man reached the stage of fatigue sooner than his city-reared comrade. The farm boy was outdistanced in games calling for mental alertness by the city man. A slow mind had resulted from his being cheated of play.

Pulling weeds and hoeing, driving a team hitched to a wagon or cultivator, may not be injurious if supplemented by other vigorous exercise. But such work without corrective activities tends to make the country boy round-shouldered and flat-chested. He is apt to have a forward-starting head.

Lungs and heart and digestion do not get a fair chance. Health examinations of more than a million school children in New York state show that while 72 per cent. of the pupils in the city schools have physical defects the number in the rural schools is 87 per cent.

As farms grow farther apart and the numbers of children in families decrease school becomes the only place where the child can play. So to cheat the child of his school time becomes a crime against his body as well as his mind.

The boy who plays ball hard at school learns the meaning of enthusiasm. He finds out what it is to abandon himself to an enterprise. No matter how slight his physique, this boy will make the hard-working, optimistic man of tomorrow. He will definitely outstrip in a brief time the large-boned boy of fifteen who is being kept at home to do the plowing.

A. G.

HEREDITY AND BODY STRUCTURE

THE old saying has it that "it takes all kinds of people to make a world." This assuredly is true as to body structure, for some are slim, some are fat, many are gaunt and many are chubby. Indeed the dictionary offers numerous terms to provide descriptions of the varying structures of human beings.

In these times women especially are little inclined to follow the particular contours that nature seems to have established for them. They seek the physician obviously with the idea that he may be able, through some potent drug, to lead them into the pleasant state of mind that comes with the "perfect 36" figure.

Nevertheless, it is an every day observation that some persons grow fat regardless of what they eat and apparently without any relationship to the amount of exercise they may take, whereas others remain slender while apparently consuming vast amounts of food.

The conditions mentioned have led scientific observers to the opinion that the body build is controlled to a considerable extent by heredity factors, by some governing influence in the material composing the original cells, male and female, from which the infant grows.

The eugenics record office of the Carnegie Institution of Washington has just published a report of statistics which it has collected bearing on this subject. It finds that the body build seems to be controlled by many factors, with fleshiness tending slightly to dominate over slenderness. There is a marked tendency for persons of similar build to intermarry, and marriages between the very tall and the very short, or between the very fat and the very thin are unusual. This process of selection tends, of course, to perpetuate the inheritance of certain types of body structure.

Furthermore, statistics indicate that some diseases are particularly associated with a slender build, namely, tuberculosis, pneumonia, nervousness and melancholia, whereas diabetes, inflammation of the kidneys, apoplexy, hardening of the arteries and numerous diseases of the stomach and intestines are associated with a fleshy structure.

It is well known that scientific studies as well as other human interests run in special phases. At this time the attention given to body constitution, as compared with other influences on its health and growth, is increasing in importance.

Physicians at the Presbyterian Hospital in New York City have initiated a series of studies on body constitution in its relationship to disease. They are considering hereditary characters according to four main groupings: anatomical structure, body function, mental processes and the ability to resist infectious diseases.

Their first series of studies made on fifty patients with gall bladder disease and thirty-nine patients with ulcers of the stomach or intestines indicated that persons who are heavy in relationship to their height are more likely to have gall bladder disease than are other persons. They found also that a wide angle between the ribs of either side is a frequent finding in infections of the gall bladder, and they noted certain peculiar developments of the jaws and teeth which were particularly associated with gall bladder disease and with ulcers.

While none of these findings was absolute, they did develop a surprising consistency, and the complete investigation may yet lead to observations of great importance in the diagnosis of human maladies.

The investigations here mentioned are of interest to the public because they indicate the application of scientific methods to the study of human growth and health. These methods are postulated not on weird conceptions of human structure, but on definite studies of anatomic configuration in relation to proved diagnoses.

M. F.

THE MILBANK MEMORIAL FUND

IT is a fine thing to have associated in the person of a philanthropist the means to give and the ability to give wisely. This union of philanthropic assets found a notable illustration in the person of Mrs. Elizabeth Milbank Anderson, the founder of the Milbank Memorial Fund.

A recent report of the board of directors of this Fund presents a historical sketch of its founder. She was one of the early pioneers in philanthropy in New York, where she was born, December 20, 1850, and where she spent her whole life. She became known throughout the country, and among the sick and needy of many other countries, as a generous and great-hearted woman, filled with human sympathy, and eager to relieve suffering and distress among all sorts and conditions of men. Her larger gifts attracted attention by their variety and wisdom.

Long before any tangible organization grew out of her interest, she gave both strength and money to promote the health of the community. A gift to the New York Association for Improving the Condition of the Poor in 1904 resulted in the Milbank Public Bath Building, which served for many years as a model for municipal baths.

The wide range of her interest is shown in the classified list of the fields of activity of the Milbank Memorial Fund, and its predecessor, the Memorial Fund Association, from 1905 to 1922. They are grouped under the headings of general education, health education, public health, child health and child welfare, special health research projects, social welfare, coordination of social effort, probation work, and relief (including war relief).

Her own views as to the most important and promising fields of activity are set forth in a letter written in 1913, and addressed to the president of the New York Association for Improving the Conditions of the Poor, at which time she gave funds for the establishment of a department of social welfare. She wrote as follows:

> In the first place I am particularly interested in fostering preventive and constructive social measures for the welfare of the poor of this city, as distinguished from relief measures affecting particular individuals and families. I fully appreciate the necessity for ministering to the physical needs of the sick, disabled, and unfortunate, but in undertaking the work outlined in this letter I wish to make it clear that the proposed department of social welfare is to concern itself, insofar as it employs funds supplied by me, with a social program based upon preventive and constructive measures.
>
> Generally speaking, therefore, this program should include those activities which are calculated to prevent sickness and thus relieve poverty, such, for example, as the promotion of cleanliness and sanitation and the securing of a proper food supply. In this connection your association will doubtless find it advisable, in some cases, to co-operate with public authorities, and with existing agencies having similar objects in view where such agencies are practicing approved methods in fulfilling their purposes, while in other cases, it will perhaps be prudent to devote some time and money to investigation and research before assurances can be given that any proposed measure will accomplish the object sought to be attained.

In her final legacy to the Fund, previous to her death in 1921, Mrs. Anderson realized the truth that "philanthropy must be fluid in order to be serviceable, for she left latitude to 'establish and promote' social effort as well as to 'maintain and endow' existing institutions. By this foresight, difficulties which in many other instances have thwarted the very work that donors had planned, were avoided in the case of this Fund. Her emphasis lay upon principles, not upon means; on prevention as a constructive process rather than on continued palliative effort."

There is a great lesson in this thought for the medical profession and all other groups having to do with individual and community health.

The total assets of the Milbank Memorial Fund aggregate nearly ten millions of dollars. Believing that it can thereby render the greatest service to humanity, the directors of the Fund are devoting the major part of the income to demonstrations by the New York Health and Tuberculosis Associations. These demonstrations are being conducted in these localities:

(1) A rural county of 50,000 to 75,000 inhabitants (Cattaraugus County was selected).

(2) A city of about 100,000 (Syracuse).

(3) A section of a great metropolitan community (New York City).

The demonstrators will seek to furnish an answer to these questions:

With adequate resources, can tuberculosis as a theoretically controllable disease be practically reduced to a minimum as a cause of illness, destitution and death?

Can favorable results obtained in smaller population units be demonstrated on larger and more varied groups?

What is the relative utility of special measures for disease control?

What constitutes the major elements of an effective community health program in which tuberculosis control is properly integrated?

What is the cost of such a program?

Can normal American communities gradually assume and permanently maintain adequate machinery for disease prevention and health conservation?

J. M. D.

IRRITATION FROM FURS

AS ALMOST every one knows, the furs which milady wears are usually not what they seem to be. Indeed, the apotheosis of the house cat is its appearance in the form of skunk or sable, and the humble rabbit may wear the mask of seal, beaver, otter, mole or chinchilla.

Unfortunately, the beautiful appearance of such furs cannot be secured without the application of dyes involving the use of chemical substances. The chemical most frequently used is paraphenylendiamin, which produces a black color, and a product resulting from oxidation of this chemical, known as quinone, which is used to produce a brown color.

The vapor of the latter substance is irritating to the nose and eyes, and persons working in fur establishments, who come in contact with it, are likely to develop eruptions between the fingers, at the angles of the mouth, the openings of the nose and the creases of the neck, or any other place where moisture may be present.

Persons wearing cheap furs, in which the dye process has not been carried out with extreme care and with particular attention to washing so as to remove all excess dye, may become affected with irritations of the skin resulting from contact with the dye.

M. F.

Clara Cleans Her Teeth

MARGARET E. GREENWOOD
AND
ELEANOR M. FONDA

BEFORE the playground gate at a fashionable summer resort, a little girl stood shyly. When invited by one of the instructors, she entered readily enough, and was soon initiated by a group of friendly children into the mysteries of "Three Deep." Clara, as she was called, differed in appearance from the other children; her clothing was untidy and her hair unkempt; but in the excitement of the game, the other children did not notice this.

A whistle sounded.

"Hurrah, luncheon time!" exclaimed the little players, and all flocked into the Community House to partake of milk and crackers.

Clara gulped her milk and swallowed her crackers hastily.

"Oh," said Edward rebukingly, "you musn't eat so fast. Why, you just swallowed your crackers whole!"

"I don't care," Clara replied pertly, "they hurt my teeth." Edward glanced at her mouth and saw, to his surprise and disapproval, broken, yellowed and decayed teeth; a sharp contrast to his shining white ones. Just then the whistle sounded again.

"Drill," called the teacher; "form lines!"

The children fell into orderly lines, Clara among them, though for what purpose she had not the slightest idea. Around the room they marched until they reached long covered racks. The covers were raised and Clara saw rows of shining little mugs and fresh, clean tooth brushes. Above each was the owner's name.

Clara was about to drop out of line, saying scornfully, "Huh, I never bother to use those things," when up came the teacher who had invited her to come in and play. In her hand she carried a new tooth brush and mug.

"These are yours, Clara," she said, and passed on without noticing Clara's pout and shrug.

Out into the playground passed the children, and filled their mugs with fresh cold water. Then, every little hand but one—that was Clara's—flew up, and to the following words, sung to a simple tune, the daily tooth brush drill was conducted, the children suiting the action to the word:

We brush them up;
We brush them down;
We brush them round and round.
We brush them every time we eat;
And in no place on any street,
Can cleaner teeth be found.

It was great fun, and the children enjoyed it as much as they did any of their games; all but Clara, who not only refused to clean her teeth, but said she never had, and she never would!

A shocked whisper ran through the playground.

"Just look at her dreadful teeth," said one.

"I don't like to play with anyone who has such dirty teeth," said another.

"She looks like 'Snaggle Tooth Susan' in the story book," said

another; and soon Clara, instead of being one of a group of merry boys and girls, was left lonely and unhappy to wander homeward by herself.

That night before going to bed, she looked at her teeth with critical eyes. They *were* ugly; she had never noticed them before, and they hurt all the time, too!

"I wonder," she thought, "I wonder if a tooth brush *does* do any good?"

From an uneasy sleep that night she was awakened by a tap, tap, at her window, and there in the moonlight on her window sill was a group of the oddest little people she had ever seen; a tall thin tooth brush man, the bristles of the brush hanging down his back like the feathered head dress of an Indian warrior; a dainty white porcelain mug lady; and a shining nickle man, who looked to Clara somewhat like her father's pliers.

Hop! Hop! Down they came from the window sill, across the floor, and upon the bed! They reached Clara's pillow, and the tooth brush man commanded bruskly:

"Open your mouth and show Dr. Forceps your teeth!"

Too frightened to protest, Clara obeyed.

"Oh, is it not sad," the tinkling voice of the mug lady exclaimed; "broken, yellow, decayed teeth; how unpleasant she is to look upon!" The dainty white lady looked pityingly at Clara.

"Well," said Dr. Forceps brightly, "those teeth are of no use to her; they merely make her sick and ugly, so—out they come!"

With that, he kneeled upon Clara's chest, and with a pair of shining forceps began pulling and tugging at her broken teeth. Out they came; first one, and then another, and another, and another!

"A good night's work," he chuckled gleefully, "perhaps she will take care of her new ones!"

Just then, Clara's mother, hearing screams, came running down the hall to Clara's room, and the tooth brush man, the porcelain mug lady and Dr. Forceps disappeared into the moonlight.

"What is the matter? What *is* the matter?" cried Clara's mother anxiously.

"Oh, my teeth, my teeth," moaned Clara, "they are all gone, and they do hurt me so!"

It took some time for her mother to convince Clara that it was only a dream.

"Dream or no dream," said self-willed Clara, "I'm not going to have teeth that ache all the time; and I'm not going to have horrid ugly broken teeth either; and I don't want to be poisoned, and I do want people to want to play with me. I'll remember what the teacher at school told us about our teeth, and what the boys and girls did at the playgrounds, and" —she hesitated a moment, and then finished bravely—"and I'll go to the dentist with you tomorrow!"

When next Clara visited the playground, some of the ugly teeth had disappeared, and those that were left were clean and white and shining. During the tooth brush drill, there was no one who brushed her teeth more carefully than did Clara, and no one who sang the little tooth brush rhyme more happily.

The Little Red Lane

There's a little Red Lane, which leads down from my mouth
  Through my throat to the highway below,
And I have to be careful what travels this Road
  From the morning till evening, you know.

If the traffic is water, sometimes it is boiled
  Although often it's straight from the lake;
My own mother signs passes to say which I'll drink;
  'Tis the same with the milk that I take.

All the glasses and cups that I use are the cars,
  And my mother inspects them with care
So that germs and impurities can't steal a ride,—
  With the food they'll slip by if they dare.

Now I tell you no germs get their passes from me
  Since I've learned what a wonderful gain
A small child may make who takes care to allow
  Only clean food to go down that Lane.

LOUISE MARTIN.

HEALTH NEWS AND VIEWS

THESE CAVE DWELLERS PAY RENT

It isn't only ancestors who inhabit caves.

This primitive form of shelter is still in vogue in the Midlands of England, where lives a colony of cave dwellers. Their homes are in caverns in the side of a great rock of red sandstone, and the architect who planned them was the sea.

International Newsreel

That the families occupying these caves live in some semblance of comfort is apparent from the fact that they pay rent for the privilege. Both rent and taxes on the caves are recognized by local authorities at Kinver, Worcestershire.

Without doubt these cave dwellers manage to secure fresh air, but even with the aid of windows it is doubtful if they get ample sunshine.

WILL ERECT HOSPITAL ON MOUNT OF OLIVES

American physicians and philanthropists have purchased an eight-acre site on the Mount of Olives in Jerusalem and will erect there a $1,000,000 medical school and hospital, according to a recent announcement by Dr. Nathan Ratnoff, president of the American Jewish Physicians' committee.

The university will become a part of the general scheme of Palestine development undertaken by the American Keren Hayesod.

Chemical and biologic laboratories in connection with the medical school and hospital are already under construction and will be opened by June 1.

LEAGUE TO INVESTIGATE "WHITE SLAVE" TRAFFIC

The council of the League of Nations has appointed a commission of experts to investigate the international traffic in women and children. Abraham Flexner of New York is chairman of the commission. To assist in this investigation, the American Social Hygiene Association has appropriated $75,000.

Some of the measures to combat this traffic which will be carried out by the council are:

Preparation of a digest of the laws on the traffic in women and children of the various nations.

Attempt to get all governments to ratify the convention of 1921 with regard to the prosecution of persons engaged in the traffic and to measures connected with immigration, for the purpose of checking such traffic.

Attempt to obtain information on matters relating to the emigration of women and children.

Employment of police women as well as men in dealing with prostitution.

BREEDING FROM BAD STOCK

Human beings today are being bred from the worst stock, says Dean Inge of St. Paul's, London, one of the leading churchmen of Great Britain and the world.

Lowest birth rates—in England, at least—are those from the class of physicians, ministers of religion and teachers.

Highest birth rates come in the feeble-minded class.

If it were the skilled workman who filled the cradles, Dean Inge declares, there would be less cause for alarm. But it is the slum dweller, the untaxed dole receiver, who is producing more than his share of the next generation.

Not only is the birth rate in the undesirable classes high, but the death rate among them is steadily being reduced, owing to sanitation and medical skill and to adaptation to town life. Formerly, through a high mortality rate, many persons of this class died annually, thus preserving a more even balance in births and deaths.

Dean Inge sees in all of this the menacing problem of overpopulation. The decline of the birth rate has prevented a social revolution in England, he says, but it has not gone far enough to remove the danger. This decline is in itself dangerous because it is steadily impairing the quality of the population.

In a recent lecture on "National Decay and Regeneration," Dean Inge made the above remarks, reported by the London correspondent of the *Journal of the American Medical Association.*

SCHOLARSHIP FOR KEEPING FIT

Something new and entirely commendable in the way of scholarships is being given annually at the University of Chicago.

A scholarship in the home economics department of that institution is awarded to the young woman student majoring in the food and nutrition division who keeps herself physically fit.

The donor of the scholarship is a former student in that department, Miss Elizabeth Villas, a nutrition worker with the American Red Cross in Texas. In giving the scholarship, Miss Villas expressed her belief in the necessity of a home economics teacher or a nutrition worker herself being in good health.

International

CANAL ZONE MERMAIDS

No students are permitted to be graduated from the Balboa high school unless they can swim. The government health director of the Panama Canal Zone is their teacher. Graduates from this school are teaching the art in many places in the United States.

Pacific and Atlantic

TRAINING LITTLE MOTHERS

The Chicago city health department sponsors the "Little Mothers Club." Here girl pupils of the schools are taught how to care for babies. When they grow up they will be able to use the knowledge on their own children.

AN AMBULANCE WITH WINGS

Ten times speedier than the automobile ambulance is the new aerial ambulance recently tested with success by the U. S. Naval Air Station on North Island, San Diego. A door closes down over the patient, making the special stretcher compartment windproof and warm.

Pacific and Atlantic

Pacific and Atlantic

READY, AIM, FIRE

They're teaching them to shoot out West. The girls of Oakland high school, Oakland, California, have one of the best rifle teams in the country.

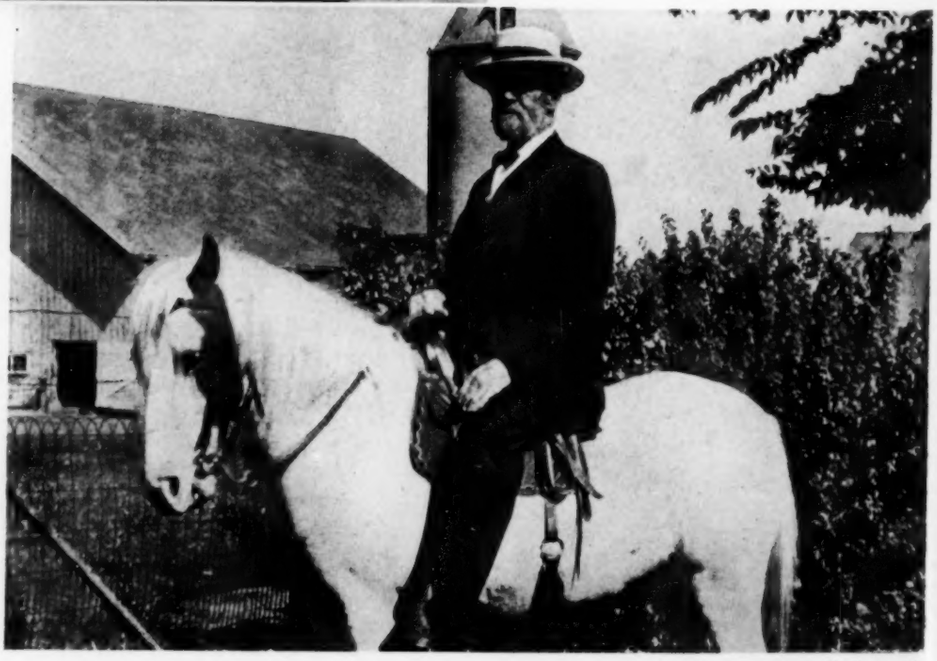
Pacific and Atlantic

MME. CURIE AT WORK IN HER LABORATORY

Just 25 years ago radium was discovered by Mme. Curie. Paris observed the anniversary with a celebration, but Mme. Curie worked all day in her laboratory. With her is Irene, her daughter and assistant.

A HORSEMAN AT 94

"Keep young by riding horseback," says Noah Franklin, president of the State Bank at Lexington, Ill. He has lived up to this rule, for he is 94 years young, and while active in business still finds time to supervise work on his farms.



Underwood & Underwood

SOLDIERS' LOT IS SWEET IN MEXICO

The Yaqui Indians who have helped to keep alive the war in Mexico must have their daily rations of sugar. Here they have stopped off during the march to chew sugar cane.

Pacific and Atlantic

International

FOR YOUR TEA TABLE

Natives on a Calcutta, India, tea plantation are sorting the leaves before they are packed and made ready for the tea tables of the world. In this district the finest tea is grown.

ALL FOR A DRINK OF WATER

The natives of Mysore, India, have devised a very unique but risky method to get pure water from the river. They manipulate the pump at a great height, balancing themselves on bamboo poles.

Pacific and Atlantic

DEVELOPING A "HEALTH CONSCIENCE" IN CHILDREN

The slimy public drinking cup, the filth-laden fly, soiled fingers, the uncovered sneeze, all can be made objects of deep-seated aversion on the part of the young child, says *The Health Forum,* the official organ of the Public Health Association of Australia, in a recent issue.

From childhood, all persons should be trained to avoid instinctively practices which endanger the health of others. Matters so fundamental to community health should not be left to conscious effort. Health habits can be instilled in the young by parents and teachers.

Even the young child can be taught to respect the ethical requirement of isolating himself when coming down with infectious disease and should be brought into the habit of giving thought to the possibility of infecting others.

Everybody should develop a "health conscience" just as, for the safety of his patients, the surgeon must develop a "surgical conscience." With the help of the "surgical conscience," the physician withstands the sudden instinctive urge to rub an itching nose or adjust the tilt of his glasses, thus breaking his system of asepsis.

HEART DISEASE TAKES LARGEST TOLL IN 1922

Influenza and pneumonia caused an increase in the death rate of the country for 1922, fatalities from those diseases having jumped from 99.8 per 100,000 of population in 1921 to 133.5 in 1922.

The death rate from all causes was placed in census bureau figures published recently at 11.8 per 1,000 population in 1922, as compared with 11.6 in 1921. The compilation, covering the registration area of the United States, which comprises 85 per cent. of the country's population, listed 1,101,863 deaths in the area, as compared with 1,032,009 in 1921.

Diseases of the heart took the largest toll, accounting for 14 per cent. of the total; influenza and pneumonia in all forms accounted for 11.3 per cent.; tuberculosis in all forms for 11.3 per cent.; nephritis 7.5 per cent., and cancer and other malignant tumors and cerebral hemorrhage and softening, each 7.3 per cent.

The death rate from diseases of the heart was 16.5 per 100,000; influenza and pneumonia, 13.3; tuberculosis, 9.7, a decrease of 2.4; nephritis, 8.8, and cancer and cerebral hemorrhage, each 8.6.

ANTI-DIPHTHERIA CAMPAIGN IN THE ANTIPODES

Diphtheria is quite as much of a menace on the other side of the world as in our own country.

In a recent number of *Health* published in Melbourne, Australia, Dr. Keith R. Moore of Bendige, Victoria, gives an interesting account of a campaign against diphtheria conducted in that city in the early months of 1923.

First a "swabbing campaign" was instituted to determine the number of carriers. Cultures were made from the throats and noses of 7,174 children and teachers at the rate of about 200 per day. Six hundred and ninety-six carriers (persons who harbored diphtheria bacilli) were detected, a total percentage of 9.69, which ranged from as high as 22.2 per cent. in one school, to nothing in one or two others. One hundred and thirty-nine tests were made of the virulence of these bacilli, of which fifty-eight (41.7 per cent.) were positive.

Then the Schick test was carried out, to find out what children were susceptible to diphtheria. To secure the consent of parents to this test, a vigorous campaign was conducted in the newspapers, by printed circulars, and by meetings of school masters and others who were addressed by the health officer.

By these means the Schick test was explained and its entire safety and great benefits were made clear. As a result, the consent of the parents of 28 per cent. of the children was secured. More than 1,580 tests were completed and 45.92 per cent. were found positive, that number of the persons tested being susceptible.

When it came to the final process, the protection of these children by the injection of toxin-antitoxin, a few parents withdrew their consent, but 650 of the susceptible received the injections and are now protected for a long time to come from any danger of acquiring diphtheria. Not a single case of poisoning occurred from any of the 7,000 injections administered, nor a single general reaction. The few local reactions were moderate and subsided within two days.

This experience is exactly in line with that which has been had in many thousands of cases in our country.

CHIPPEWA INDIANS GET PUBLIC HEALTH NURSING SERVICE

Two young women of Chippewa descent are now employed by the Minnesota state board of health to act as public health nurses among their own people.

They are graduate nurses and have had special training in the public health field.

The infant death rate among the Indians in Minnesota is said to be excessive, and the establishment of this public health nursing service is an effort to relieve these conditions.

The two Chippewa nurses are provided with small cars to get about in and with suitable material for demonstration purposes. They do their field work under the personal direction of Miss Ruth Houlton, R.N., of the division of child hygiene.

Funds obtained from the American Child Health Association and through the Sheppard-Towner act provide for the work among the Indians of Minnesota.

That there are great possibilities for improvement of health and sanitary conditions among the Indians through this plan of public health nursing service is the belief of Dr. A. J. Chelsey, executive officer of the Minnesota state board of health, who in a recent bulletin outlines the work being done.

How smallpox is increasing in many localities is illustrated by a recent report from Detroit, Michigan. From October 1 to December 15, 1923, 117 cases were reported as against eighty-five cases for the whole year 1922. There were thirty-seven definite foci of possible infection distributed all over the city.

BOOK REVIEWS

STUDIES IN EVOLUTION AND GENETICS: By S. J. Holmes. Pp. v and 261. Harcourt, Brace & Co. 1923.

Professor S. J. Holmes presents in this volume a series of essays on evolution, heredity, birth control, eugenics and race mixture, representing the principal socio-biological questions of the day.

None of these subjects is treated systematically, but there is progression of ideas throughout the book. Unity is achieved by the consistency of the writer. At the present time when so much is published on these subjects in the spirit of the propagandist and special advocate, a book written in the scholarly and kindly critical spirit of the author, with a complete mastery of the materials, is valuable and timely.

Dr. Holmes is known as one of the most thorough students of the biology of society in America, and he brings to these essays that sense of responsibility that only long study of the problems and appreciation of their fundamental significance to society can give. He sides neither with the pessimists nor the optimists; he is equally free from the vice of a weak middle-ground, and takes his own position on each problem.

In the first two studies dealing with evolution and natural selection, Dr. Holmes takes his stand definitely on the side of those who believe in natural selection as against the Lamarckians. "If there are other evolutionary factors at work besides natural selection," he says, "their existence has not been revealed, and beyond natural selection there is only—darkness."

Modern biology in dealing with this problem has less philosophical speculation than in the past and more experimental inquiry. It is in this spirit that Holmes concludes in his next chapter that degeneration necessarily follows the stopping of selection (Weismann's theory of Panmixia) because, from the standpoint of adaptiveness, research in genetics has shown that there are more minus than plus variations; hence "whenever conditions are such that the minus variations are on an equal footing with any others they will tend to accumulate." This leads naturally to the discussion of "Our Deteriorating Inheritance."

Though actual statistical proof of race deterioration is incomplete, owing to absence of the necessary statistics, yet "from our knowledge of the evolutionary factors at work in human society it is scarcely possible to avoid the conclusion that a certain amount of decadence is inevitable."

However, Holmes believes that the evolutionary value of competition and extermination in society whether individual, economic, or international as means to racial progress has been overdrawn, and that on the whole international peace and social improvement would tend toward race improvement also if society succeeded in restoring the correlation (found among animals) between the ability to breed prolifically and the possession of superior qualities.

The inheritance of mental qualities is next considered. An illuminating discussion of infant mortality leads to the interesting conclusion that "the more the death rate can be reduced by the elimination of unfavorable conditions the more stringently or discriminatingly selective it becomes."

Holmes also argues that civilization does not diminish the rigor of natural selection as assumed by Conklin, Guyer and many others. The authors seem to have identified reduction in the number of deaths per thousand of the population with a corresponding reduction of the action of natural selection; but it is obvious, according to Holmes, that decrease of the death rate may occur in such a way that the proper action of natural selection is increased, if the reduction occurs by elimination of non-selective causes of death. Sexual selection, early marriages and birth control are the subjects of Chapters IX to XII. Other subjects discussed are the misconceptions of eugenics, immigration and race mixture, and the biological fortunes of the Negro.

The book is to be highly commended to those who wish a sane and discriminating discussion of these problems.

F. B. L.

INDIVIDUAL GYMNASTICS: A Handbook of Corrective and Remedial Gymnastics. By Lillian Curtis Drew, Director of Department of Corrective Gymnastics, Central Branch Y. W. C. A., New York City; Instructor in Corrective and Remedial Gymnastics and Kinesiology, Central School of Hygiene and Physical Education of New York University, New York City; Formerly Director of Department of Corrective Gymnastics, Teachers' College, Columbia University, New York City; Instructor in Corrective Gymnastics under the direction of Dr. E. H. Bradford, Boston, and Dr. E. G. Brackett, Boston. Second edition, thoroughly revised. Illustrated with 109 engravings. Lea and Febiger, Philadelphia and New York. 1923.

This book, coming as it does from an accepted authority on the symmetry of physique, contains chapters of great value both to teachers and parents, but it is of especial value to workers in physical education.

The first chapter states definitely the author's attitude toward the place of individual gymnastics in a physical education program. One wishes that education had not been prefaced by the word "physical." Fortunately, the necessary apparatus described is not so elaborate as to be prohibitive. It is to be regretted, however, that the writer did not emphasize the value of direct sunlight in a room used for corrective work. She makes quite clear the teacher's responsibility for localized activity but gives the necessary warning against using exercise for some conditions except on medical recommendation.

Good posture is discussed for its hygienic, social, economic and esthetic value. If teachers of growing children would read the section on "Analysis of Correct Posture," much bad teaching of "shoulders back" and consequent rigidity would be avoided. Methods of examinations and recording of findings are presented, faulty posture, and means for its correction are discussed in detail with illustrative figures. Added to the work for the individual, typical programs of exercises for groups are suggested. These suggestions will be much appreciated by teachers who desire to offer correction but are obliged to handle large groups.

If every parent would read the two chapters on feet and shoes, many children would be spared much suffering and limitation of usefulness.

The chapter on overweight and underweight is suggestive and, while outlining programs of exercises, all definite dietaries are omitted.

The book has a clear, definite style and relatively few terms are technical. It is conservative, making no claim that individual gymnastics will cure all ills, but rather that, used with understanding and perseverance, many will be corrected.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed.

Chlorosis

To the Editor:—What is the cause and is there a cure for chlorosis? How long should an attack last?

F. G., Kansas.

Answer.—The essential cause of chlorosis is unknown. One theory is that is it due to some disturbance of the glands of internal secretion, especially the ovaries. There is an interference with blood production in this condition.

The specific remedy is iron, combined with sunlight, fresh air, good food and rest.

Recovery, if proper treatment is instituted, usually occurs in from a few weeks to a few months.

Dandruff

To the Editor:—For the past few years there has been a noticeable amount of dandruff in my hair. Besides being very disagreeable it causes my scalp to become oily more quickly. Kindly give me information or references to literature about the control of dandruff. Could you recommend any remedy? I have tried several remedies: olive oil, Danderine, and tar soap; none of these, however, has helped.

A. H., Iowa.

Answer.—Oily scaling of the scalp is not uncommon. It is usually preceded by a dry scaling. When excessive production of oil occurs, treatment is difficult. It should be directed by a competent specialist in diseases of the skin and hair.

Constipation in Babies

To the Editor:—1. My baby will be three months old the sixteenth of this month. She is breast fed and is given two ounces of prune juice a day, yet she has no bowel movement without the aid of a laxative. Her stools are never formed or constipated. I am never constipated. I eat plenty of fruits and bran. The baby refuses to take orange juice and water. How may I remedy this constipation? 2. Should I put saccharine in her water? 3. Do all breast fed babies regurgitate?

Mrs. E. P. W., Illinois.

Answer.—1. The condition described is frequently seen in breast fed infants as constipation. In view of the soft breast milk stools, it should rather be viewed as a result of a weak abdominal wall and intestinal muscle trying to overcome the contraction of a strong sphincter muscle at the anus. The condition is most easily corrected by placing the infant in a sitting position over a small vessel held between the mother's knees, after inserting a small glycerine suppository into the rectum or injecting an ounce of sweet oil.

The baby will soon respond to this slight irritation by emptying its bowels and usually in a comparatively short time will empty its bowels when placed in this position without the use of the suppository or injection. The best time to do this is before the baby's morning bath.

Three months is the right age at which to begin this training. The continuation of prune juice and orange juice feedings is advisable.

2. Discontinue the use of saccharine, since it can serve no purpose in relieving the baby's condition.

3. Regurgitation in a breast fed infant is most commonly due to overfeeding or too frequent feeding. It may be due to the spasm of the muscle at the outlet of the stomach. These infants do not do well. If the baby is well nourished this condition is probably not present.

Lime Water and Milk

To the Editor:—What effect does lime water have on milk? Is it a milk modifier? Hot milk agrees with me best, but I have heard that lime water should not be heated in milk but added to cold or cooled milk only. How much lime water should be added to one glass of milk? Does lime water prevent milk from forming a curd in the stomach? Can you tell me anything that will make milk more digestible and prevent its forming a curd in the stomach?

A. W. R.

Answer.—An effort to find some scientific basis for the use of lime water in milk shows that there is little, beyond tradition, in its favor. Lime water is a mild alkaline solution, the effect of which on milk is probably more to dilute it than to change it chemically. A milk modifier for the purpose mentioned is sodium citrate, which can be obtained in 5 grain tablets and should be used in the proportion of one gram of sodium citrate to one ounce of milk.

Causes of High Pulse

To the Editor:—What is the cause of high pulse and what will help to make it normal?

I. S., Washington.

Answer.—There are many causes: excitement or nervousness, exertion, high fever, action of certain drugs, certain forms of goiter, anemia, various forms of heart disease, circulatory weakness from any cause, etc. Each type demands special consideration.

"Eat More" Campaigns

To the Editor:—Everywhere one sees advertisements advising the public to eat more raisins, drink more milk, or eat more meat. Is this continued urging desirable? Is it not possible to overindulge in some of these foods?

R. H. S., Washington.

Answer.—Overindulgence in practically any food may lead to distress. Many persons have a limited tolerance for a food like raisins; for instance, a man with chronic inflammation of the intestines might well hesitate to secure his iron through the use of such dried, whole fruit, which is, as one man said, "a mixture of sugar and skins." While the advice to drink more milk every day is good, this also may be overdone in cases in which milk is not well tolerated. Cases are known in which there was a loss of weight due to using milk exclusively, and not in relation to other substances of diet. In view of the fact that most of our population is engaged in sedentary occupations, it would appear to be desirable in general not to urge the eating of greater quantities of food. Already, there appears to be a definite tendency towards obesity. After all, the best advice is that embodied in the old proverb which recommended moderation in all things.

Raw vs. Pasteurized Milk

To the Editor:—A question has come up in our school pertaining to the merits of pasteurized versus raw milk. I have had a raw milk butter-fat content of 4.5 per cent. and a bacteria count ranging from 14,000 to 25,000, rarely as high as 25,000 but usually around 15,000. Cows are tuberculin tested annually, and as the dairy man raises all his own stock there is no danger of tuberculosis being brought in.

Since we have moved to another section of the city, I am unable to get raw milk, and have been compelled to use pasteurized milk. I had it analyzed and find it has a butter-fat content of 4 per cent. and a bacteria count of 57,000, which our milk inspector considers very good.

After our children, five and three years, had developed bowel trouble, the first they ever had, I had the milk tested. This same milk is being given at school, and I refused to let my little girl drink it. The head of our school tells me it is far more dangerous for me to use the raw milk than the pasteurized as the tuberculin test is made so rarely that there is great danger.

I feel that the milk is much cleaner and the danger of tuberculosis much less in the raw milk I was getting than in milk with a 57,000 bacteria count. I realize that 57,000 is considered low, but when you consider what it must have been before pasteurizing, I feel as if it were not clean enough for my family. I'd almost as soon offer boiled dish water to drink.

I would like some authoritative information on both sides of the question.

My children are both normal in weight—in fact they are slightly overweight—and are in perfect health, but I acknowledge the fact that so are some of the pasteurized milk babies.

Mrs. S. H. R., Michigan.

Answer.—Good milk, properly pasteurized, is always safer and better than raw milk, however good.

This is because: (1) tuberculin testing can protect against tuberculosis only, and then not completely; (2) milk spreads many other diseases besides tuberculosis, such as typhoid fever, diphtheria, scarlet fever, intestinal disorders and septic sore throat; with some of these diseases a milker who is "going down" with a disease may begin to throw off the germs of the disease and endanger the milk for two days before he has the slightest idea he is going to be sick. Obviously, no amount of care can avert this danger.

You are right, however, in insisting that milk must be properly pasteurized. Improperly pasteurized milk is just as dangerous as raw milk.

Find out from the health officer whether he is making sure that the milk is being properly pasteurized. If he advises in the affirmative, by all means use the pasteurized milk. If not, the best plan is to buy the best quality of raw milk and boil it or pasteurize it before using it. In the latter case, however, the community in which you reside should immediately take steps to do whatever is necessary to secure proper control of pasteurization.

Falling Hair

To the Editor:—I have an awful falling of hair, but don't seem to have much or any dandruff. Please suggest a treatment I should use.

S. J. B., North Dakota.

Answer.—Falling of the hair is due to a variety of causes. One type known as premature senile alopecia begins at about twenty-one years of age, is transmitted through the male line and progresses to baldness, which is complete on the top of the head but leaves a fringe of thick hair around the margins of the scalp. This is not preceded by any change in the scalp and no treatment is known to be of value.

Another common variety is that which is due to an infectious inflammatory process in the hair follicles and which is preceded by dry dandruff and itching. The dry dandruff later becomes excessively oily. This type of falling hair may be treated by local applications.

A less common type of baldness follows a severe fever. This type usually needs no treatment.

Oily Hair

To the Editor:—Ever since I bobbed my hair there has been an excess of oil in it. I wash it on an average of about twice a week now. I know this is too often but it gets so oily and comes out so badly that I feel it is necessary to wash it to keep it looking well. I would like to know the cause of this and some remedy for it.

J. S., Kansas.

Answer.—There is no evident reason why bobbed hair should be more oily than longer hair, and we would not know how to account for such an occurrence. In the face of these facts, it seems entirely likely that the increased oiliness is a coincidence and not a result of bobbing the hair. There is no harm in washing the hair twice a week, if this is necessary because of excessive oiliness, and this is the best remedy for it.

Dandruff

Biting the Nails

To the Editor:—1. Both myself and little girl have dandruff. What is the cause and is there any positive cure for it? 2. All three of my children are more or less inclined to bite their finger nails. The little girl especially bites hers so much that her fingers are sore. She is eight years old, large for her age and seemingly healthy. Is it a natural nervousness which causes her to do this or is it due to some other trouble?

Mrs. G. R. B., Kansas.

Answer.—1. The exact cause of dandruff is not known. In many cases it seems to be the result of excessive oiliness of the scalp and hair. In mild cases it is often sufficient to wash the scalp two or three times weekly with a good soap, care being taken to rinse the hair thoroughly to remove all the soap. When this is not successful special advice should be obtained.

If the excessive dandruff has not been of too long standing, the scalp can recover entirely, though attention to sufficient frequency of washing will always be necessary. There is some evidence to suggest that the trouble may be contagious and therefore individual hair brushes, combs and towels should be insisted on.

2. Biting the nails is not necessarily an indication of nervousness, but is a habit that may be compared with thumb-sucking, gum-chewing and the like. In some cases it is possibly related at first to a state of worry or apprehension on the part of the child, and it may sometimes be necessary to have an investigation made to discover causes for such worries which may exist in the child's mind without the knowledge of the parents. This should be made by a physician with experience in the behavior of children. It should also be realized that younger children may acquire the habit by copying the older ones.

In treatment, the cooperation of the child must be secured in the effort to break the habit by arousing his interest in presenting a better appearance such as is necessary if he is to appear in company.

With the understanding and the consent of the child that it is only to remind him when the fingers find their way unconsciously into his mouth, it is permissible to paint the nails with a solution of alum which has a bitter and unpleasant taste. This and similar methods should not be used as a punishment.

HEALTH REVIEWS

THE STERN PARENT

The stern parent relies upon the principle that external discipline will produce men and women of firm moral fiber. This is far from the case, says Miss Isabel M. Flinn, lecturer in education at the University of Queensland, Australia, in a recent issue of *The Health Forum.*

If good, self-reliant, disciplined men and women come out of homes where the greatest sternness has been used, it is in spite of their training rather than because of it, Miss Flinn declares.

True discipline is self-discipline. In the indulgent family the child is undisciplined; in the repressive the discipline is external. If the discipline is thrown off we have a rebel; if accepted, a subject. In no case have we the citizen.

The repressed child often becomes a very Tartar as a man. Unconsciously he revenges himself on his father by suppressing his wife and children. Others glory in being the champions of the oppressed; often this championship is nothing more than an expression of rebellion against the father.

"Ridicule, scolding and punishment often prevent the child from putting forth his best efforts," says Miss Flinn. "His ego reacts against this painful sense of inferiority by sending him to take refuge in phantasy, by leading him into sensation-mongering, or wanton destruction which achieves the effect of giving him a place in the limelight. Genuine achievement and discriminate praise would often give him the mental balance he lacks."

GARDEN THEATERS FOR PLAYGROUNDS

Community playgrounds should be more than places with horizontal bars, rings and baseball diamonds. The playgrounds of the average American city are not playgrounds but outdoor gymnasia, says Florence Holmes Gerke in a recent issue of *The American City.*

As the playgrounds now are, they fulfil only half of their mission since play is the general term for exercise, both physical and mental. The opportunity for mental exercise on the public playgrounds is greatly limited.

The appeal to the imagination and the creative faculties in the drama gives one opportunity for mental exercise on the playground, the article brings out. All children, and adults as well, have the dramatic instinct, and the love for dressing up and being some one other than one's self is universal.

In most instances the playground director who wishes to dramatize the Babes in the Wood or Cinderella has no place for such activity. There is often not even a quiet green corner where the story hour may be held.

Half the battle in scenery and costuming might be solved, says this writer, by an informal garden theater or even a fairly secluded lawn with green shrubbery and some shade trees.

Such a garden theater need in no way be elaborate, with masonry walls and seats, but a simple area depending upon its greenness for its charm. Its uses are many and are not confined to one age or group.

Here could be held the neighborhood flower show, the harvest exhibit of prize vegetables, the exhibit of the bird houses made by the boys, the Scouts' show of camping equipment and rites, May Pole dances, band concerts and the like.

If the ground is flat, the stage should be elevated, but it is more pleasing if the seating space slopes gently toward the stage.

Shade is valuable in the theater which is to be used during the hot months. Screen plantings should follow in general the effect given by the drop curtain and wings of the indoor theater, but should not be too set and formal.

If the site chosen has trees and large shrubs, these should be worked into the scheme, wherever possible.

Turf makes an excellent floor for the stage, and grassy banks are pleasant to sit on, provided the area is well drained and the turf thoroughly established.

HOW ONE MOUTH BREATHER WAS REFORMED

"Recently, in conversation with a friend, I remarked that her little daughter had entirely overcome her former habit of mouth breathing, which had persisted long after her adenoids had been removed," says Charles F. Powlison, general secretary of the National Child Welfare Association, in an article on "The Why, When and How of Visual Education" in a recent issue of *Child-Welfare Magazine.*

"'Yes,' replied my friend. 'I thought she never would break that habit, for I had talked and coaxed and scolded for months, with no effect. But one day we were in the subway and right across from us there sat a very stupid looking immigrant woman with her mouth hanging open.

"'I turned to Katherine and whispered, "Look at that woman, Kay. That's just the way you look when you forget to close your mouth."

"'She gave one horrified glance at the repulsive looking woman, and neither of us spoke of it again, but I noticed that from that day she began really to try to break the habit, and now, as you see, she has completely conquered it.'"

Everyone can recall, Mr. Powlison believes, similar moments when, by a sudden vivid eye-picture, he has learned a lesson which no mere words could have taught him.

That is the reason why the motion picture, the lantern slide and the poster, supplementing the spoken and written word, have a very definite place in teaching.

Training the powers of observation should begin when life begins and end only when life ends, Mr. Powlison believes, and the best way to develop such powers in children is by permitting in the school and home only the best and most helpful pictures and by excluding the hideous, the vulgar and the inexact.

MOST DANGEROUS OCCUPATIONS

The largest number of yearly fatalities, as given by the United States bureau of labor statistics, occurs among electric light and power workers. Lumbermen and woodchoppers hold second place in the dangerous list. Policemen and sheriffs rank third, and coal mining is the fourth most perilous of occupations.

Next in order come transportation by water, metal mining, work about warehouses, steam railroads, road and street transportation, and oil and gas production. A discussion of the above industrial hazards is contained in a recent issue of *The Survey.*